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A HISTORY

OF

GREEK PHILOSOPHY

VOL. I.

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AND PARLIAMENT STREET

A HISTORY

OF

GREEK PHILOSOPHY

FROM THE EARLIEST PERIOD TO THE TIME OF SOCRATES

WITH A GENERAL INTRODUCTION

TRANSLATED FROM THE GERMAN OF

D^{R} E. ZELLER

PROFESSOR IN THE UNIVERSITY OF BERLIN

with the Author's sanction

BY

S. F. ALLEYNE

IN TWO VOLUMES

VOL. I.

LONDON
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1881

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TRANSLATOR'S PREFACE.

THE present work is a translation of the fourth and last edition of the first part of Dr. Zeller's 'Philosophie der Griechen.' That this part, containing the General Introduction to the entire subject and the history of the earliest philosophers, should appear after others dealing with the later periods, is in some measure to be regretted, because Greek Philosophy is best treated as a whole, and gains immensely by being studied in the order of development; yet those who are acquainted with the previously translated portions of Dr. Zeller's work will be the more ready to welcome the introductory volume, without which, indeed, many things in the later philosophy, and in Dr. Zeller's treatment of it, would have remained comparatively obscure.

There is no need to speak highly of a work so well known. The translator has endeavoured to make her version as literal as possible, considering the requirements of the English language and its deficiency in precise equivalents for German philosophical terms—a deficiency giving rise to many difficulties which she cannot hope to have always successfully overcome.

She desires to express her hearty thanks to Mr. EVELYN ABBOTT, Fellow and Tutor of Balliol College, Oxford, for his valuable assistance in reading over the proof sheets, especially in regard to the Greek notes.

It is, perhaps, necessary to add, respecting the numerous references, that Vol. I. and II. stand for the volumes of the present translation, and Part I. II. and III. for the divisions of the German work.

CLIFTON: *December* 6, 1880.

AUTHOR'S PREFACE.

TWENTY YEARS AGO, when I published in its later form the first volume of this work, originally designed on a different plan, and a far more limited scale, I explained in the following words the principles which had guided me in its composition: 'In the treatment of my subject I have constantly kept in view the task which I proposed to myself in my first approaches to it; viz. to maintain a middle course between erudite enquiry and the speculative study of history: neither, on the one hand, to collect facts in a merely empirical manner; nor, on the other, to construct *a priori* theories; but through the traditions themselves, by means of critical sifting and historical combination, to arrive at a knowledge of their importance and interdependence. This task, however, in regard to the pre-Socratic philosophy was rendered peculiarly difficult by the character of the sources and the divergencies of modern opinions respecting them: it was impossible adequately to fulfil it without a number of critical discussions, often descending to the minutest details. That the clearness of the historical exposition, however, might not be thereby impaired, I have consigned these discussions as much as possible to the notes, where also the testimonies and references respecting the authorities find a fitting place. But the writings from which these are taken are many, and some of them difficult to obtain, so that it has often been necessary to give the quotations at length to make it possible for the reader to test the authenticity of my exposition without an unwarrantable expenditure of time. Thus the amount of notes, and consequently the size of the whole volume, have increased to a considerable extent; but I hope I have chosen rightly in attending before all things to the scientific requirements of the reader, and in doubtful cases preferring to economise his time rather than the printer's paper.'

I have kept to the same points of view in the preparation of the following volumes, and of the new editions which have since become necessary. The hope that I have therein adopted the proper course has been fully justified by the reception given to my work; and though the principle (not previously quite unknown to me) has recently been pressed upon my attention, that the ancient philosophers must be treated philosophically, I have never yet been able to convince myself that the method hitherto pursued by me has been a mistake. I still hold, more strongly than ever, that the philosophic apprehension of systems of philosophy (which, however, must be distinguished from philosophic *criticism*) entirely coincides with the historic apprehension of them. I can never indeed consider that a proper history has been written if the author has stopped short at the bare enumeration of isolated doctrines and statements without enquiring as to their centre of gravity, examining their interconnection, or tracing out their exact meaning; without determining their relation and importance to the various systems collectively. But, on the other hand, I must protest against the misuse of the noble name of philosophy for the purpose of depriving historical phenomena of their distinctive character, of forcing upon the ancient philosophers inferences which they expressly repudiate, of effacing the contradictions and supplying the lacunæ of their systems with adjuncts that are pure inventions. The great phenomena of the past are much too great in my eyes for me to suppose that I could do them any service by exalting them above their historical conditions and limitations. In my opinion, such a false idealisation makes them smaller instead of greater. At all events, nothing can thereby be gained for historic truth, before which every predilection for particular persons and schools must give way. Whoever would expound a philosophic system must reproduce the theories held by its author in the connection which they had in his mind. This we can only learn from the testimony of the philosophers themselves, and from the statements of others concerning their doctrines; but, in comparing these testimonies, in examining their authenticity and credibility, in completing them by inferences and combinations of various kinds, we must be careful to remember two things: in the first place, the inductions which carry us beyond direct testimony must in each case be founded on the totality of evidence in our possession; and when a philosophic theory seems to us to require certain further theories, we must always examine whether other portions of the author's system, quite as important in his estimation, do not stand in the way. Secondly, we must enquire whether we are justified in supposing that the philosopher we are considering propounded to himself the questions which *we* are propounding to him, returned to himself the answers which *we* derive from other statements of his, or himself drew the inferences which to *us* appear necessary. To proceed in this spirit of scientific circumspection has been at any rate my own endeavour. To this end, as will be seen in the later no less than in the earlier editions of my work, I have also tried to learn from those writers who here and there, on points of greater or lesser importance, have differed from me. If I am indebted to these writers for many things that have assisted in the completion and correction of my exposition, it will nevertheless be understood that, in all essential points, I could only remain true to my own view of the pre-Socratic philosophy, and have defended that view as persistently and decidedly as the interest of the subject demanded, against objections which seemed to me unconvincing and untenable.

I dedicated the second edition of the present work to my father-in-law, Dr. F. Chr. Baur, of Tübingen. In the third I was obliged to omit the dedication, because he to whom it was addressed was no longer among us. But I cannot refrain from recalling in this place, with affection and gratitude, the memory of a man who was not only to me in all personal relations a friend and father, but also, in regard to my scientific labours, has left for me and for all his disciples a shining example of incorruptible love of truth, untiring perseverance in research, inexhaustible diligence, penetrative criticism, and width and coherence in the treatment of history.

Berlin: *October* 18, 1876.

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ERRATA.

Page 4, line 9—*for* Shepherd Βοσκοί *read* herds of grazing Βοσκοί.
„ 54, line 2 from foot—*for* particulars *read* particular.
„ 72, line 19—*for* seventeenth *read* seventh.
„ 94, 2, line 17—*for* sup. p. 93 *read* sup. p. 91, 8 ; cf. 98, 4.
„ 145, 1, line 2—*for* the Protagoras *read* Protagoras.
„ 214, *n.* line 28 (first column)—*for* Anacolius *read* Anatolius.
„ 219, 8, line 10 (second column)—*for* affinity *read* infinity.
„ 231, *n.* line 20 (first column)—*for* 238, 1 *read* 228, 3.
„ 247, 1—*for* 223, 1 *read* 233, 1.
„ 251, line 9—*for* surrounds *read* surrounded.
„ 260, 4—*for* 151, 1 *read* 251, 1.
„ 263, 2—*for* pp. 197, 200 *read* 241, 244.
„ 265, 3—*for* 197 *read* 241.
„ 269, 2, line 8—*for* 268, 1 *read* 267, 1.
„ 288, 8—*for* 241, 1 *read* 241, 2.
„ 289, 1, line 9—*for* 291, 1 *read* 291, 2.
„ 292, 1—*for* 290, 4 *read* 291, 1.
„ 352, 1—*for* 336, 4 *read* 336, 5.
„ 434, 2, line 2—*for* 426. 6 *read* 429, 6.
„ 444, 1, line 3—*for* conservation *read* assertion.
„ 444, 2—*for* 442, 1 *read* 443, 1.
„ 468, 1, line 5 from foot (second column)—*for* 415 *read* 526.
„ 527, 3—*for* 372, 1 *read* 372, 4.
„ 527, 4, line 4 from foot—*for* 491 *read* 528.
„ 531, 2—*for* 529, 5 *read* 530, 2.
„ 533, 1—*for* 547, 1 *read* 548, 1.
„ 543, 1, line 14 (second column)—*for* 547, 1 *read* 548, 1.
„ 554, 4—*for* 547, 1 *read* 548, 1.
„ 554, 4—*for* 542, 1 *read* 543, 1.
„ 560, 1, lines 18 and 19—*for* infra *read* supra ; *for* 544, 1 *read* 545, 1.
„ 566, 1—*for* 549, 1 *read* 548, 2 ; *for* 560, 2 *read* 562, 5.
„ 587, line 8—*omit* therefore
„ 608, 2, lines 4 and 7—*for* 543 *read* 617, *n.* ; *for* 590, 1 *read* 591, 1.
„ 623, line 19—*for* connections *read* connection.

THE PHILOSOPHY OF THE GREEKS

IN ITS

HISTORICAL DEVELOPMENT.

INTRODUCTION.

CHAPTER I.

AIM, SCOPE AND METHOD OF THE PRESENT WORK.

THE term Philosophy, as in use among the Greeks, varied greatly in its meaning and compass.[1] Originally it denoted all mental culture, and all effort in the direction of culture;[2] even as *σοφία*, the word from which it is derived, was applied to every art and every kind of knowledge.[3] A more restricted significance seems first to have been given to it in the time of the Sophists, when it became usual to seek after a wider knowledge by means of more special and adequate instruction than ordinary education and the unmethodical routine of practical life could of themselves afford.[1] By Philosophy was now understood the study of things of the mind, pursued not as an accessory employment and matter of amusement, but exclusively and as a separate vocation. The word Philosophy, however, was not as yet limited to philosophic science in its present acceptation, nor even to science in general, for which other designations were much more in vogue: to philosophise was to study, to devote oneself to any theoretic activity.[2] Philosophers in the narrower sense, down to the time of Socrates, were ordinarily designated as wise men or Sophists,[3] and, more precisely, as physicists.[4]

---

[1] Cf. the valuable evidence of Haym in Ersch and Gruber's *Allgemeine Encyklopaedie*, sect. iii. b. 24, p. 3 sqq.

[2] Thus Crœsus says to Solon (Herodotus, i. 30) that he had heard *ὡς φιλοσοφέων γῆν πολλὴν θεωρίης εἵνεκεν ἐπελήλυθας*. Similarly, Pericles (Thucydides, ii. 40), in the funeral oration: *φιλοκαλοῦμεν γὰρ μετ' εὐτελείας καὶ φιλοσοφοῦμεν ἄνευ μαλακίας*. The same vague use of the word is long after to be met with even among writers who are not unacquainted with the stricter sense.

[3] Cf. Aristotle's *Eth. Nic.* vi. 7, sub init., and the verse quoted by him from the Homeric Margites. Cf. also infra, the section on the Sophists.

A more definite use of the word is first met with in Plato. Plato calls that man a philosopher who in his speculation and his practice has regard to essence, and not to appearance; Philosophy, as he apprehends it, is the elevation of the mind towards true Reality,—the scientific cognition and moral exposition of the idea. Finally, Aristotle still further limits the sphere of Philosophy, by wholly excluding from it practical activity; but he fluctuates between a wider and a narrower definition. According to the wider, Philosophy includes all scientific knowledge and research; according to the narrower, it is restricted to enquiries concerning the ultimate causes of things, the so-called 'First Philosophy.'

---

[1] Pythagoras indeed, according to a well-known anecdote, had previously assumed the name of philosopher; but the story is in the first place uncertain; and in the second it keeps the indeterminate sense of the word according to which philosophy signified all striving after wisdom.

[2] The expression, for example, in Xenophon (*Mem.* iv. 2, 23) has this sense; for the philosophy of Euthydemus (according to section 1) consists in his studying the writings of the poets and Sophists; and similarly in *Conv.* 1, 5, Socrates compares himself, as *αὐτουργὸς τῆς φιλοσοφίας*, with Callias, the disciple of the Sophists. Also in *Cyrop.* vi. 1, 41, *φιλοσοφεῖν* means generally to cogitate, to study. Isocrates uses it in this way (*Paneg.* c. 1) when he calls his own activity *τὴν περὶ τοὺς λόγους φιλοσοφίαν*, or even simply *φιλοσοφία, φιλοσοφεῖν* (*Panath.* c. 4, 5, 8; *περὶ ἀντιδοσ.* 181–186, 271, 285 and elsewhere. Plato himself adopts this wider meaning in *Gorgias* 484 C and 485 A sqq., *Protagoras* 335 D, *Lysis* 213 D. Cf. also the commencement of the *Menexenus*.

[3] This name was given, for instance, to the seven wise men, to Solon, Pythagoras and Socrates; also to the pre-Socratic natural philosophers. Vide infra, *loc. cit.*

[4] *Φυσικοί, φυσιολόγοι*, the recognised name for the philosophers especially of the Ionian schools, and those connected with them.

Scarcely, however, had this beginning been made towards a precise determination of Philosophy when the attempt was again abandoned; Philosophy in the post-Aristotelian schools is sometimes exclusively defined as the practice of wisdom, the art of happiness, the science of life; sometimes it is hardly discriminated from the empirical sciences, and sometimes confounded with mere erudition. This confusion was promoted, not only by the learned tendencies of the Peripatetic school and of the whole Alexandrian period, but also and more especially by Stoicism, since Chrysippus had included in the circle of his so-called philosophical enquiries the arts of grammar, music, &c., while his very definition of Philosophy, as the science of things divine and human, must have rendered difficult any precise limitation of its domain.[1] After this period science became more and more involved with mythology and theological poetry, to the increasing disturbance of the boundaries of both these spheres; and the conception of Philosophy soon lost all distinctness. On the one hand, the Neo-Platonists regarded Linus and Orpheus as the first of philosophers, the Chaldean oracles as the primitive sources of the highest wisdom, and the sacred rites, asceticism and theurgic superstition of their school as the true philosophy; on the other, the Christian theologians, with equal right, glorified monastic life as Christian philosophy, and gave to the various sects of monks, including even the Shepherd *Βοσκοί*, a name which Plato and Aristotle had reserved for the highest activity of the human intellect.[1]

---

[1] Appealing to this definition, Strabo, at the opening of his work, declares geography to be an essential part of philosophy; for polymathy, says he, is the business of a philosopher. Further authorities for the above will be given in the course of this work.

But it is not merely the name which is wanting in accurate limitation and fixity of import. Uncertainty of language usually implies uncertainty of thought, and the present case forms no exception. If the extent of the term Philosophy was only gradually settled, Philosophy itself only gradually appeared as a specific form of intellectual life. If the word fluctuates between a wider and a narrower significance, Philosophy similarly fluctuates; being sometimes restricted to a definite scientific sphere, and sometimes mingled with alien ingredients of various kinds. The pre-Socratic Philosophy developed itself partly in connection with mythological ideas. Even for Plato the mythus is a necessity, and after the period of Neo-Pythagoreism, polytheistic theology acquires such an influence over Philosophy that Philosophy at last becomes merely the interpreter of theological traditions. With the Pythagoreans, the Sophists, Socrates, the Cynics and the Cyrenaics, scientific speculation was connected with practical enquiries, which these philosophers did not themselves discriminate from their science. Plato reckons moral conduct as much a part of Philosophy as knowledge; while after Aristotle, Philosophy was so increasingly regarded from the practical point of view, that it ultimately became identified with moral culture and true religion. Lastly, among the Greeks, the sciences (in the modern acceptation of the term) were only by slow degrees, and at no time very accurately, discriminated from Philosophy. Philosophy in Greece is not merely the central point towards which all scientific efforts converge; it is, originally, the whole which includes them in itself. The sense of form peculiar to the Greek cannot let him rest in any partial or isolated view of things; moreover, his knowledge was at first so limited that he was far less occupied than we are with the study of the particular. From the outset, therefore, his glance was directed to the totality of things, and it was only by little and little that particular sciences separated themselves from this collective science. Plato himself, excluding the mechanical and practical arts, recognises only Philosophy and the various branches of mathematics as sciences proper; indeed, the treatment he claims for mathematics would make it simply a part of Philosophy. Aristotle includes under Philosophy, besides mathematics, all his physical enquiries, deeply as these enter into the study of the particular. It was only in the Alexandrian period that the special sciences attained to independent cultivation. We find, however, among the Stoics, as well as the Peripatetics, that philosophic enquiry was blended with, and often hampered by, a great mass of erudition and empirical observations. In the eclecticism of the Roman period, this erudite element was still more prominent; and though the founder of Neo-Platonism confined himself strictly to questions of pure philosophy, his school, in its reliance on the authorities of antiquity, was apt to overlade its philosophic expositions with a superabundance of learning.

---

[1] *φιλοσοφεῖν* and *φιλοσοφία* are the ordinary terms employed at that period to designate the ascetic life and its various forms; so that, for example, Sozomenus, in the case above mentioned (*Hist. Eccles.* vi. 33), concludes his statement about the Βοσκοί with the words *καὶ οἱ μὲν ὧδε ἐφιλοσόφουν*. Christianity itself is not unfrequently called *φιλοσοφία*; thus Melito, in Eusebius's *Church History*, iv. 26, 7, speaks of the Judaic-Christian religion as *ἡ καθ' ἡμᾶς φιλοσοφία*. Philo similarly (*quod omnis probus liber*, 877 C, D; *vita contemplat.* 893 D) describes the theology of the Essenes and Therapeutæ, with its allegorical interpretation of Scripture, as *φιλοσοφεῖν*, *πάτριος φιλοσοφία*.

If, then, we are to include in the history of Greek Philosophy all that was called Philosophy by the Greeks, or that is brought forward in philosophic writings, and exclude all that does not expressly bear the name, it is evident that the boundaries of our exposition will be in part too narrow, and in part, and for the most part, much too wide. If, on the other hand, we are to treat of Philosophy in itself, as we find it in Greece, whether called Philosophy or not, the question arises how it is to be recognised and how we are to distinguish it from what is not Philosophy. It is clear that such a test can only lie in the conception formed of Philosophy. This conception, however, changes with the philosophic standpoint of individuals and of whole periods; and thus it would appear that the sphere of the history of Philosophy must constantly change in like manner and in the same proportion. The dilemma lies in the nature of things and is in no way to be avoided; least of all by basing our procedure, not on fixed conceptions, but on confused impressions, and indefinite, perhaps contradictory, ideas; or by trusting, each writer for himself, to an obscure historical sense to determine how much he shall include in his exposition or reject from it. For if philosophic conceptions alter, subjective impressions alter yet more, and the only resource that would at last remain to us in this uncertain method—namely, a reference to learned usage—would not improve matters from a scientific point of view. One thing, at any rate, follows from these reflections. We must have, as the basis of our exposition, as true and exhaustive a theory as we can of the essence of Philosophy. That this is not altogether impracticable, and that some degree of unanimity is attainable on the subject, there is all the more reason to hope, because we are here concerned not with the terms and constituents of any one philosophic system, but with the general and formal conception of Philosophy, as it is assumed, tacitly, or in express terms, in every system. Different opinions are possible, to some extent, even here; but this difficulty is common to all walks of knowledge. We can only, each one of us according to his ability, seek out the truth, and leave what we find to be corrected, if necessary, by advancing science.

How Philosophy is to be defined, is therefore a question which philosophic science alone can answer. I must here confine myself to a statement of the results at which I have arrived in regard to the matter, so far as this is necessary for the task I have in hand. I con-

(1) sider Philosophy, first, as a purely theoretic activity; that is, an activity which is solely concerned with the *ascertainment* of reality; and from this point of view, I exclude from the conception and history of Philosophy all practical or artistic efforts as such, irrespective of their possible connection with any particular theory of (2) the world. I next define Philosophy more precisely as science. I see in it not merely thought, but thought that is methodical, and directed in a conscious manner to the cognition of things in their interdependence. By this characteristic, I distinguish it as well from the unscientific reflection of daily life as from the religious and poetical view of the world. Lastly, I find the distinction between Philosophy and other sciences is this:—that all other sciences aim at the exploration of some specific sphere, whereas Philosophy has in view the (3) sum total of existence as a whole, seeks to know the individual in its relation to the whole, and by the laws of the whole, and so to attain the correlation of all knowledge. So far, therefore, as this aim can be shown to exist, so far and no farther I should extend the domain of the history of Philosophy. That such an aim was not clearly evident from the beginning, and was at first abundantly intermingled with foreign elements, we have already seen, nor can we wonder at it. But this need not prevent our abstracting from the aggregate of Greek intellectual life all that bears the character of Philosophy, and considering it in and for itself, in its historical manifestation. There is, indeed, some danger, in this mode of procedure, of doing violence to the actual historical connection; but this danger we may

escape by allowing full weight to such considerations as the following: the constant interminglement of philosophic with other elements; the gradual nature of the development by which science won for itself an independent existence; the peculiar character of the later syncretism; the importance of Philosophy for culture in general, and its dependence on existing conditions. If due account be taken of these circumstances, if in the several systems we are careful to distinguish what is philosophical from what is merely accessory, and to measure the importance of the individual, in regard to the development of philosophic thought, by the precise standard and concept of Philosophy, the claims of historic completeness and scientific exactitude will be equally satisfied.

[illegible]

The object of our exposition having been thus determined on one of its sides, and the Philosophy of the Greeks clearly distinguished from the phenomena akin to it and connected with it, there remains the farther question as to the extent and boundaries of *Greek* Philosophy; whether we are to seek it only among the members of the Greek race, or in the whole field of Hellenic culture; and, in the latter case, how the area of that field is to be determined. This is, of course, more or less optional; and it would in itself be perfectly legitimate either to close the history of Greek science with its passage into the Roman and Oriental world, or, on the other hand, to trace its effects down to our own time. It seems, however, most natural to call Philosophy Greek, so long as there is in it a preponderance of the Hellenic element over the foreign, and whenever that proportion is reversed to abandon the name. As the former is the case not only with the Græco-Roman Philosophy, but also with the Neo-Platonists and their predecessors; as even the Judaic-Alexandrian school is much more closely related to the contemporary Greek Philosophy, and had much more influence on its development, than any phenomenon of the Christian world, I include this school in the compass of the present exposition. On the other hand, I exclude from it the Christian speculation of the first centuries, for there we see Hellenic science overpowered by a new principle in which it henceforth lost its specific character.

The scientific treatment of this historical material must necessarily follow the same laws as the writing of history in general. Our task is to ascertain and to expound what has happened; a philosophic construction of it, even if this were possible, would not be the affair of the historian. But such a construction is not possible, for two reasons. First, because no one will ever attain to so exhaustive a conception of humanity, and so exact a knowledge of all the conditions of its historical development, as to justify his deducing from thence the particulars of its empirical circumstances, and the changes undergone by these in time; and next, because the course of history is not of such a nature that it can be made the object of an *à priori* construction. For history is essentially the product of the free activity of individuals, and though in this very activity an universal law is working, and through this activity fulfilling itself, yet none of its special effects, and not even the most important phenomena of history in all their particular features, can be fully explained from the point of view of *à priori* necessity. The actions of individuals are subject to that contingency which is the heritage of the finite will and understanding; and if from the concurrence, the collision, and the friction of these individual actions, a regular course of events as a whole is finally produced, neither the particular in this course, nor even the whole, is at any point absolutely necessary. All is necessary in so far only as it belongs to the general progress, the logical framework as it were of history; while as to its chronological manifestation, all is more or less contingent. So closely are the two elements interwoven with each other that it is impossible, even in our reflections, wholly to separate them. The necessary accomplishes itself by a number of intermediaries, any one of which might be conceived other than it is; but, at the same time, the practised glance can detect the thread of historical necessity in notions and actions apparently the most fortuitous; and from the arbitrary conduct of men who lived hundreds and thousands of years ago, circumstances may have arisen which work on us with all the strength of such a necessity.[1] The sphere of history, therefore, is distinct in its nature from that of Philosophy. Philosophy has to seek out the essence of things, and the general laws of events; history has to exhibit definite given phenomena of a certain date, and to explain them by their empirical conditions.

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[1] A more particular discussion of these questions will be found in my dissertation on the freedom of the human will, on evil, and the moral order of the world.—*Theologisches Jahrbuch*, v. vi. (1846 and 1847); cf. especially vi. 220 sqq.; 253 sqq.

Each of these sciences requires the other, but neither can be supplanted by or substituted for the other; nor in its procedure can the history of Philosophy take the same course that would be applicable to the formation of a philosophic system. To say that the historical sequence of the philosophic systems is identical with the logical sequence of the concepts which characterise them,[1] is to confound two very different things. Logic, as Hegel conceived it, has to expound the pure categories of thought as such; the history of Philosophy is concerned with the chronological development of human thought. If the course of the one were to coincide with that of the other, this would presuppose that logical or, more precisely, ontological conceptions form the essential content of all systems of Philosophy; and that these conceptions have been attained in the progress of history from the same starting-point, and in the same order as in the logical construction of pure concepts. But this is not the case. Philosophy is not merely Logic or Ontology; its object is, in a general sense, the Real. The various philosophic systems show us the sum total of the attempts hitherto made to gain a scientific view of the world. Their content, therefore, cannot be reduced to mere logical categories without depriving it of its specific character and merging it in the universal. Moreover, while speculative Logic begins with the most abstract conceptions, in order thence to attain to others more concrete, the historical development of philosophic thought starts with the consideration of the concrete, first in external nature, then in man, and leads only by degrees to logical and metaphysical abstractions. The law of development also is different in Logic and in History. Logic is occupied merely with the internal relation of concepts, irrespective of any chronological relation; History treats of the changes effected in course of time in the notions of mankind. Progress, from anterior to posterior concepts, is regulated, in the former case, exclusively according to logical points of view; each conclusion is therefore linked to the next that is properly deducible from it by thought. In the latter case, progression takes place according to psychological motives; each philosopher constructs out of the doctrine inherited from his predecessors, and each period out of that handed down to it by tradition, whatever their own apprehension of the doctrine, their modes of thought, experiences, knowledge, necessities, and scientific resources enable them to construct; but this may possibly be something quite other than what we, from our standpoint, should construct out of it. Logical consequence can only regulate the historical progress of Philosophy to the extent that it is recognised by the philosophers, and the necessity of following it acknowledged; how far that is the case depends on all the circumstances by which scientific convictions are conditioned. Over and above what may be directly or indirectly derived from the earlier Philosophy, either by inference or polemic, a decisive influence is often exercised in this respect by the conditions and necessities of practical life, by religious interests, and by the state of empirical knowledge and general culture. It is impossible to regard all systems as merely the consequences of their immediate predecessors, and no system which contributes special thoughts of its own can in its origin and contents be thus restricted. What is new in those thoughts arises from new experiences having been made, or new points of view gained for such as had been previously made; aspects and elements of these which before were unnoticed are now taken into account, and some particular moment is invested with another meaning than heretofore. Far, then, from assenting to the Hegelian position, we must rather maintain that no system of Philosophy is so constituted that its principle may be expressed by a purely logical conception; not one has formed itself out of its predecessors simply according to the law of logical progress. Any survey of the past will show us how impossible it is to recognise, even approximately, the order of the Hegelian or any other speculative logic in the order of the philosophic systems, unless we make out of them something quite different from what they really are. This attempt is, therefore, a failure both in principle and practice, and the truth it contains is only the universal conviction that the development of history is internally governed by regular laws.

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[1] Hegel's *Geschichte der Philosophie*, i. 43. Against this assertion objections were raised by me in the *Jahrbücher der Gegenwart*, 1843, p. 209, sq.; and by Schwegler in his *Geschichte der Philosophie*, p. 2 sq.; which objections I repeated in the second edition of the present work. This gave occasion to Herr Monrad, professor at Christiania, in a letter addressed to me, bearing the title *De vi logicæ rationis in describenda philosophiæ historia* (Christiania, 1860), to defend the proposition of Hegel. In consequence of this treatise, which I cannot here examine in detail, I have made some changes in the form of my discussion, and also some additions.

This conviction, indeed, the history of Philosophy ought on no account to renounce; we need not confine ourselves to the mere amassing and critical testing of traditions, or to that unsatisfactory pragmatic procedure which is content to explain particulars severally in reference to individual personalities, circumstances and influences, but attempts no explanation of the whole as such. Our exposition must, of course, be grounded upon historical tradition, and all that it treats of must either be directly contained in tradition, or derived from it by strictest deduction. But it is impossible even to establish our facts, so long as we regard them merely in an isolated manner. Tradition is not itself fact; we shall never succeed in proving its trustworthiness, in solving its contradictions, in supplying its lacunæ, if we do not keep in view the connection of single facts, the concatenation of causes and effects, the place of the individual in the whole. Still less, however, is it possible to understand facts, apart from this interconnection, or to arrive at a knowledge of their essential nature and historical importance. Where, lastly, our exposition is concerned with scientific systems, and not merely with opinions and events, there the very nature of the subject demands, more urgently than in other cases, that the particular shall be studied in relation to the aggregate; and this demand can only be satisfied by the concatenation of every particular known to us through tradition, or deducible from tradition, into one great whole.

The first point of unity is constituted by individuals. Every philosophic opinion is primarily the thought of some particular man, and is, therefore, to be explained by his intellectual character and the circumstances under which it was formed. Our first task, then, will be to unite the opinions of each philosopher into a collective whole, to show the connection of those opinions with his philosophic character, and to enquire into the causes and influences by which they were originally conditioned. That is to say, we must first ascertain the principle of each system, and explain how it arose; and then consider how the system was the outcome of the principle: for the principle of a system is the thought which most clearly and fundamentally expresses the specific philosophic character of its author, and forms the focus of union for all his views. Every individual thing in a system cannot, of course, be explained by its principle; all the knowledge which a philosopher possesses, all the convictions which he forms (often long before his scientific thoughts become matured), all the conceptions which he has derived from multifarious experiences, are not brought even by himself into connection with his philosophic principles; accidental influences, arbitrary incidents, errors and faults of reasoning are constantly interposing themselves, while the gaps in the records and accounts often prevent our pronouncing with certainty on the original connection of the various constituents of a doctrine. All this lies in the nature of things; but our problem must at any rate be kept in view until we have exhausted all the means in our power for its solution.

The individual, however, with the mode of thought peculiar to him, does not stand alone; others ally themselves with him, and he allies himself with others; others come into collision with him, and he comes into collision with others; schools of philosophy are formed having with each other various relations of dependence, agreement, and contradiction. As the history of Philosophy traces out these relations, the forms with which it is concerned divide themselves into larger or smaller groups. We perceive that it is only in this definite connection with others that the individual became and effected that which he did become and effect; and hence arises the necessity of explaining the specific character and importance of the individual by reference to the group which includes him. But even such an explanation as this will not in all respects suffice; for each individual, besides the characteristics common to his class, possesses much that is peculiar to himself. He not only continues the work of his predecessors, but adds something new to it, or else disputes their presuppositions and conclusions. The more important, however, a personality has been, and the farther its historical influence has extended, the more will its individual character, even while opening out new paths, disappear and lose itself in the universal and necessary course of history. For the historical importance of the individual depends upon his accomplishing that which is required by an universal need; and so far only as this is the case, does his work become part of the general possession. The merely individual in man is also the transitory; the individual can only work in an abiding manner and on a grand scale when he yields himself and his personality to the service of the universal, and executes with his particular activity a part of the common work.

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But if this hold good of the relation of individuals to the spheres to which they belong, is it not equally true of the relation of these spheres to the greater wholes in which they are comprehended? Each nation and, generally speaking, each historically coherent portion of mankind, has the measure and direction of its spiritual life traced out for it, partly by the inherent specific qualities of its members, and partly by the physical and historical conditions that determine its development. No individual, even if he desires it, can withdraw himself from this common character; and he who is called to a great sphere of historical action will not desire it, for he has no ground for his activity to work on except in the whole of which he is a member; and from this whole, and thence only, there flows to him by numberless channels, for the most part unnoticed, the supplies by the free utilization of which his own spiritual personality is formed and maintained. But for the same reason all individuals are dependent on the past. Each is a child of his age as well as of his nation, and as he will never achieve anything great if he does not work in the spirit of his nation,[1] so surely will he fail unless he stands on the ground of all previous historical acquirement. If, therefore, the spiritual store of mankind, as the work of self-active beings, is always subject to change, this change is of necessity continuous; and the same law of historical continuity holds good also of each smaller sphere, so far as its natural development is not hindered by external influences. In this process of development each period has the advantage of the culture and experience of the previous periods; the historic development of mankind, therefore, is upon the whole a development towards ever higher culture—a progression. But particular nations, and entire groups of nations, may nevertheless be thrown back into lower stages by external misfortunes, or their own internal exhaustion; important tracts of human culture may long lie fallow; progress itself may at first be accomplished in an indirect manner, through the breaking up of some imperfect form of civilisation. In defining, then, the law of historical progress in its application to particular phenomena, we must be careful to explain progress merely as the logical development of those qualities and conditions which are originally inherent in the character and circumstances of a nation, or field of culture. This development in every individual case is not necessarily an improvement; there may come disturbances and seasons of decay, in which a nation or a form of civilisation ceases to exist, and other forms work their way forward, perhaps painfully and by long and circuitous paths, to carry on the development of history. Here, too, a law is present in the historic evolution, inasmuch as its general course is determined by the nature of things; but this law is not so simple, nor this course so direct, as we might have anticipated. Moreover, as the character and sequence of the historic periods are the result of law and not of chance, the same may be said of the order and character of the various developments contained in them. Not that these developments can be constructed *à priori* in reference to the general concept of the sphere in question; that of the State, for instance, or Religion, or Philosophy. But for each historic whole, or for each of its periods of development, a definite course is marked out by its own fundamental character, by its external circumstances, by its place in history. That the course thus prescribed by existing conditions should be actually followed, is not more wonderful than the fulfilment of any other calculation of probabilities. For, though accidental circumstances often give an impulse and a direction to the activity of individuals, it is natural and necessary that among a great number of men there should be a variety of dispositions—of culture, of character, of forms of activity, of external conditions—sufficient to furnish representatives of all the different tendencies possible under the given circumstances. It is natural and necessary that each historical phenomenon should either, by attraction or repulsion, evoke others which serve to supplement it; that the various dispositions and forces should display themselves in action; that all the different views of a question that may be taken should be stated, and all the different methods of solving given problems should be tried. In a word, the regular course and organic articulation of history are not an *à priori* postulate; but the nature of historic conditions and the constitution of the human mind involve that the historic development should, notwithstanding all the contingency of the individual, follow, on the whole and in the main, a fixed law; and to recognize the working of such regularity in any given case, we need not abandon the *terra firma* of facts, we need only examine the facts thoroughly, and draw the conclusions to which they themselves contain the premises.

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[1] Or of the whole to which he belongs—his church, school, or whatever it may be.

What we ask, therefore, is but the complete application of a purely historic method. We would have no theoretic construction of history, proceeding from theory to fact; our history must be built up from below, out of the materials that are actually given. It stands to reason, however, that these materials cannot be made use of in their rough state; we must call in the aid of a searching historical analysis to determine the essence and internal connection of all the phenomena concerned.

This conception of our problem will not, I trust, be open to the charges raised against the Hegelian construction of history. Rightly understood, it can never lead to the distortion of facts, or the sacrifice of the free movement of history to an abstract formalism, since it is upon historical facts and traditions, and upon these alone, that we propose to base our reasoning as to the relation of past phenomena: only in what has been freely produced shall we seek for historical necessity. If this be thought impossible and paradoxical, we might appeal to the universal conviction of the rule of a Divine Providence—a conception which before all things implies that the course of history is not fortuitous, but is determined by a higher necessity. In case, however, we are dissatisfied (as we may reasonably be) with an argument resting solely on faith, we have only to examine more closely the concept of liberty to convince ourselves that liberty is something other than caprice or chance, that the free activity of man has its inborn measure in the primitive essence of spirit, and in the laws of human nature; and that by virtue of this internal subjection to law, even what is really fortuitous in the individual act becomes necessity in the grand course of historic evolution. To follow this course in detail is the main problem of history.

Whether in regard to the history of Philosophy it is necessary or even advantageous for the writer to possess any philosophic conviction of his own, is a question that would scarcely have been raised had not the dread of a philosophic construction of history caused some minds to overlook the most simple and obvious truths. Few would maintain that the history of law, for instance, would find its best exponent in a person who had no opinions on the subject of jurisprudence; or political history, in one who embraced no theory of politics. It is hard to see why it should be otherwise with the history of Philosophy. How can the historian even understand the doctrines of the philosophers; by what standard is he to judge of their importance; how can he discern the internal connection of the systems, or form any opinion respecting their reciprocal relations, unless he is guided in his labours by fixed philosophic principles? But the more developed and mutually consistent these principles are, the more must we ascribe to him a definite system; and since clearly developed and consistent principles are undoubtedly to be desired in a writer of history, we cannot avoid the conclusion that it is necessary and good that he should bring with him to the study of the earlier Philosophy a philosophic system of his own.

It is possible, indeed, that his system may be too contracted to interpret for him the meaning of his predecessors; it is also possible that he may apply it to history in a perverse manner, by introducing his own opinions into the doctrines of previous philosophers, and constructing out of his own system that which he should have tried to understand by its help. But we must not make the general principle answerable for these faults of individuals; and still less can we hope to escape them by entering on the history of Philosophy devoid of any philosophic conviction. The human mind is not like a *tabula rasa*, the facts of history are not simply reflected in it like a picture on a photographic plate, but every view of a given occurrence is arrived at by independent observation, combination, and judgment of the facts. Philosophic impartiality, therefore, does not consist in the absence of all presuppositions, but in bringing to the study of past events presuppositions that are true. The man who is without any philosophic stand-point is not on that account without any stand-point whatever; he who has formed no scientific opinion on philosophic questions has an unscientific opinion about them. To say that we should bring to the history of Philosophy no philosophy of our own, really means that in dealing with it we should give the preference to unscientific notions as compared with scientific ideas. And the same reasoning would apply to the assertion[1] that the historian ought to form his system in the course of writing his history, from history itself; that by means of history he is to emancipate himself from any preconceived system, in order thus to attain the universal and the true. From what point of view then is he to regard history, that it may do him this service? From the false and narrow point of view which he must quit that he may rightly comprehend history? or from the universal point of view which history itself must first enable him to attain? The one is manifestly as impracticable as the other, and we are ultimately confined within this circle: that he alone completely understands the history of Philosophy who possesses true and complete philosophy; and that he only arrives at true philosophy who is led to it by understanding history. Nor can this circle ever be entirely escaped: the history of Philosophy is the test of the truth of systems; and to have a philosophic system is the condition of a man's understanding history. The truer and the more comprehensive a philosophy is, the better will it teach us the importance of previous philosophies; and the more unintelligible we find the history of Philosophy, the greater reason have we to doubt the truth of our own philosophic conceptions. But the only conclusion to be drawn from this is that we ought never to regard the work of science as finished in the historic any more than in the philosophic domain. As in a general manner, Philosophy and Experimental Science mutually require and condition one another, so it is here. Each forward movement of philosophic knowledge offers new points of view to historic reflection, facilitates the comprehension of the earlier systems, of their interconnection and relations; while, on the other hand, each newly attained perception of the manner in which the problems of Philosophy have been solved or regarded by others, and of the internal connection and consequences of their theories, instructs us afresh concerning the questions which Philosophy has to answer, the different courses it may pursue in answering them, and the consequences which may be anticipated from the adoption of each course.

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[1] By Wirth in the *Jahrbücher der Gegenwart*, 1844, 709 sq.

But it is time that we should approach our subject somewhat more closely.

CHAPTER II.

ORIGIN OF GREEK PHILOSOPHY.

§ I.—*Is Greek Philosophy derived from Oriental Speculation?*

In order to explain the growth of Greek Philosophy, we must first enquire out of what historical conditions it arose; whether it evolved itself as a native product from the spirit and culture of the Greek people, or was transplanted from without into Hellenic soil, and grew up under foreign influences. The Greeks, we know, were early inclined to ascribe to the Eastern nations (the only nations whose culture preceded their own) a share in the origin of their philosophy; but in the most ancient period, certain isolated doctrines merely were thus derived from the East.[1] As far as our information extends, not the Greeks, but the Orientals, were the first to attribute such an origin to Greek Philosophy generally. The Jews of the Alexandrian school, educated under Greek influences, sought by means of this theory to explain the supposed harmony of their sacred writings with the doctrines of the Hellenes, agreeably to their own stand-point and interests;[2] and in the same manner the Egyptian priests, after they had become acquainted, under the Ptolemies, with Greek Philosophy, made great boast of the wisdom, which not only prophets and poets, but also philosophers were said to have acquired from them.[1] Somewhat later, the theory gained admittance among the Greeks themselves. When Greek Philosophy, despairing of its own powers, began to expect its salvation from some higher revelation, and to seek for such a revelation in religious traditions, it was natural that the doctrines of the ancient thinkers should be ascribed to the same source; and the more difficulty there was in explaining these doctrines from native tradition, the more readily was their origin attributed to races, long since revered as the teachers of the Greeks, and whose wisdom enjoyed the highest reputation, because the unknown has generally a charm for the imagination, and seen, as it must be, through a mysterious haze, is wont to look greater than it really is. Thus, after the period of Neo-Pythagoreism there spread, chiefly from Alexandria, the belief that the most important of the ancient philosophers had been instructed by Eastern priests and sages, and that their most characteristic doctrines had been taken from this source. This opinion in the following centuries became more and more general, and the later Neo-Platonists especially carried it to such an extent that, according to them, the philosophers had been scarcely more than the promulgators of doctrines perfected ages before in the traditions of the Asiatic races. No wonder that Christian authors, even after the time of the Reformation, continued the same strain, doubting neither the Jewish statements as to the dependence of Greek Philosophy on the religion of the Old Testament, nor the stories which made Phœnicians, Egyptians, Persians, Babylonians and Hindoos the instructors of the ancient philosophers.[1] Modern science has long ago discarded the fables of the Jews respecting the intercourse of the

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[1] Cf. infra, the chapters on Pythagoras and Plato.

[2] Further details on this subject will be found in the chapter relating to the Judaic Alexandrian Philosophy.

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[1] We find nothing in Herodotus as to any Egyptian origin of Greek Philosophy. In regard to religion, on the other hand, he not only maintains that certain Greek cults and doctrines (especially the worship of Dionysus and the doctrine of Transmigration, ii. 49, 123) were imported from Egypt to Greece, but says in a general manner (ii. 52) that the Pelasgi at first adored their deities simply under the name of the gods, and afterwards received the particular names of these gods (with the few exceptions enumerated in c. 50) from Egypt. That this assertion is chiefly founded on the statements of the Egyptian priest appears probable from c. 50; and still more from c. 54, where Herodotus relates from the mouth of these priests a story of two women who, carried off by Phœnicians from the Egyptian Thebes, founded the first oracles—one in Hellas, the other in Libya. This story manifestly arose from a rationalistic interpretation of the Dodonaic legend of the two doves (c. 55), and was imposed on the credulous stranger through the assurances of the priests, that what they told about the fate of these women they had ascertained by repeated enquiries. As the priests then represented themselves to be the founders of the Greek *religion*, so at a later period they claimed to be the founders of Greek *Philosophy*. Thus Crantor (ap. Proclus *in Tim.* 24 B) says, in reference to the Platonic myth of the Athenians and Atlantides: *μαρτυροῦσι δὲ καὶ οἱ προφῆται τῶν Αἰγυπτίων ἐν στήλαις ταῖς ἔτι σωζομέναις ταῦτα γεγράφθαι λέγοντες*—therewith giving a valuable hint for estimating the worth of such statements; and Diodorus asserts, i. 96: the Egyptian priests related, *ἐκ τῶν ἀναγραφῶν τῶν ἐν ταῖς ἱεραῖς βίβλοις*, that Orpheus, Musæus, Lycurgus, Solon, &c., had come to them; and moreover, Plato, Pythagoras, Eudoxus, Democritus, and Œnopides from Chios, and that relics of these men were still shown in Egypt. These philosophers had borrowed from the Egyptians the doctrines, arts, and institutions which they transmitted to the Hellenes; Pythagoras, for example, his geometry, his theory of numbers, and transmigration; Democritus, his astronomical knowledge; Lycurgus, Plato and Solon, their laws.

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[1] Among these the Alexandrians were again preeminent. Clemens dwells with especial predilection on this theme in his *Stromata*. Plato to him is simply ὁ ἐξ Ἑβραίων φιλόσοφος (*Strom.* i. 274 B); and the Hellenic philosophers generally are represented as having borrowed portions of the truth from the Hebrew prophets, and given them out as their own (ibid. 312 C, 320 A).

Greek sages with Moses and the prophets ; but the idea that Greek Philosophy partly or entirely originated in the Pagan East has more facts to urge in its behalf. It has also found support in the high opinion of Oriental wisdom induced by our better acquaintance with the Chinese, Persian and Indian sacred records, and by our researches into Egyptian antiquity ; an opinion which harmonizes with certain philosophical speculations concerning a primitive revelation and a golden age. More sober philosophy, indeed, questioned the truth of these speculations, and thoughtful students of history sought vainly for traces of that high culture which was said to have adorned the childhood of the world. Our admiration, too, for the Oriental Philosophy, of which, according to its enthusiastic admirers, only some fragments had reached the Greeks, has been considerably modified by our growing knowledge of its true content and character. When, in addition to this, the old uncritical manner of confusing separate modes of thought had been abandoned, and every notion began to be studied in its historical connection, and in relation with the peculiar character and circumstances of the people among whom it appeared, it was natural that the differences of Greek and Oriental cultivation, and the self-dependence of the Greek, should again be more strongly emphasized by those best acquainted with classical antiquity. Still, there have not been wanting, even quite recently, some to maintain that the East had a decisive influence on the earliest Greek Philosophy; and the whole question seems by no means so entirely settled that the History of Philosophy can avoid its repeated discussion.

One point, however, is to be noted, the neglect of which has not unfrequently brought confusion into this enquiry. In a certain sense, the influence of Oriental conceptions on Greek Philosophy may well be admitted even by those who consider that Philosophy to be purely a Greek creation. The Greeks, like the other Indo-Germanic races, arose out of Asia, and from this their earliest home they must originally have brought with them, together with their language, the general groundwork of their religion and manners. After they had reached their later abodes, they were still open to influences which reached them from the Oriental nations, partly through Thrace and the Bosphorus, partly by way of the Ægean and its islands. The national character of Greece, therefore, was even in its origin under the influence of the Oriental spirit, and Greek religion, especially, can only be understood on the supposition that foreign rites and religious ideas from the North and South-east were superadded to the faith of Greek antiquity, and, in a lesser degree, even to that of the Homeric age. The latest of these immigrant gods, such as Dionysus, Cybele, and the Phœnician Heracles, can now with sufficient certainty be proved alien in their origin; while in the case of others, in the present stage of the enquiry, we have still to be content with doubtful conjectures. In considering the Oriental origin of Greek philosophy, however, we can only take into account those Eastern influences, the entrance of which had nothing to do with the early religion of Greece, or the development of the Greek character generally; for the scope of our work involves our regarding the philosophy of the Greeks, at any rate primarily, as a product of the Greek spirit; and to enquire how that spirit was formed would be beside the purpose of the History of Philosophy. Only in so far as the Oriental element maintained itself in its specific character, side by side with the Hellenic element, are we now concerned with it. If, indeed, Röth were correct in asserting, as he does,[1] that Philosophy did not spring from the civilisation and spiritual life of the Greeks, but was transplanted among them as something foreign, and that the whole circle of notions lying at its root came ready made from without, then, and then only, we might derive Greek Philosophy absolutely from the East. But if, on the other hand, it was the immediate product of the Greek philosophers' own reflection, in that case it has essentially a native origin, and the question can no longer be whether, as a whole, it came from the East, but whether Oriental doctrines had any share in its formation, how far this foreign influence extended, and to what extent we can still recognize in it the Oriental element proper, as distinct from the Hellenic element. These different cases have not always hitherto been sufficiently discriminated; and the advocates of Oriental influence especially have frequently neglected to explain whether the foreign element came into Philosophy directly or through the medium of the Greek religion. There is a wide difference between the two alternatives, and it is with the former alone that we are here concerned.

Those who maintain that Greek Philosophy origin-

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[1] *Geschichte unserer abendländischen Philosophie*, i. 74, 241.

Eastern origin of Greek philosophy

ally came from the East, support their opinion partly on the statements of the ancients, and partly on the supposed internal affinity between Greek and Oriental doctrines. The first of these proofs is very unsatisfactory.

(1) Statements of the ancients.

Later writers, it is true, particularly the adherents of the Neo-Pythagorean and Neo-Platonic Schools, speak much of the wisdom which Thales, Pherecydes and Pythagoras, Democritus and Plato, owed to the teaching of Egyptian priests, Chaldeans, Magi, and even Brahmans. But this evidence could only be valid if we were assured that it rested on a trustworthy tradition, reaching back to the time of these philosophers themselves. And who can guarantee us such an assurance? The assertions of these comparatively recent authors respecting the ancient philosophers must be cautiously received even when they mention their references; for their historical sense and critical faculty are almost invariably so dull, and the dogmatic presuppositions of subsequent philosophy are so intrusively apparent in their language, that we can trust very few of them even for a correct version of their authorities, and in no single instance can we hope for a sound judgment concerning the worth and origin of those authorities, or an accurate discrimination of the genuine from the spurious, the fabulous from the historic. Indeed, when anything, otherwise unknown to us, is related by them of Plato, Pythagoras, or any of the ancient philosophers without any reference to authorities, we may take for granted that the story is founded, in the great majority of cases, neither on fact nor on respectable tradition, but at best on some unauthenticated rumour, and still oftener, perhaps, on a misunderstanding, an arbitrary conjecture, a dogmatic presupposition, or even a deliberate invention. This is true in an especial manner of the question as to the relation of Greek Philosophy with the East; for, on the one hand, the Orientals had the strongest inducements of vanity and self-interest to invent an Eastern origin for Greek science and culture; and, on the other, the Greeks were only too ready to allow the claim. It is precisely with such unauthenticated statements that we have here to do, and these statements are so suspiciously connected with the peculiar standpoint of the authors who make them, that it would be very rash to build hypotheses of great importance in history on a foundation so insecure. If we put aside, then, these untrustworthy witnesses, and have recourse to older authorities, the result is no better; we find either that they assert much less than the later writers, or that their assertions are based far more upon conjecture than historical knowledge. Thales may have been in Egypt: we have no certain evidence of the fact; but it is not likely that he there learned more than the first rudiments of mathematics. That Pythagoras visited that country, and that his whole philosophy originated thence, was first asserted by Isocrates, in a passage which is more than suspected of being a rhetorical fiction. Herodotus says nothing about his having come to Egypt, and represents him as having derived from the Egyptians only a very few doctrines and customs, and these at third hand. The distant journeys of Democritus are better attested; but what he learnt in the course of them from the barbarians we are not certainly informed, for the story of

Eastern origin of Greek philosophy

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Hyperboreer und die alten Schinesen, 1866. *Die Religion und die Philosophie in ihrer Weltgeschichtlichen Entwicklung*, 1852. In what follows I keep principally to this last treatise.

[2] *Gesch. uns. Abendl. Phil.* i. 74 sqq., 228 sq., 459 sq. In the second part of this work he ascribes to the doctrines of Zoroaster a share in Pythagoreism.

the Phœnician Atomist Mochus deserves no credit.[1] Plato's travels in Egypt also seem to be historical, and have at any rate much more evidence in their favour than the subsequent and improbable statements as to his intercourse with Phœnicians, Jews, Chaldeans and Persians. Whatever later authors may have said, or rather surmised, about the fruits of these travels, Plato himself clearly expresses his own opinion of the wisdom of the Egyptians, when he ascribes to the Greeks, as their special characteristic, a taste for knowledge, and to the Egyptians, as to the Phœnicians, a love of gain.[2] As a fact, he praises them in various passages, not for philosophic discoveries, but for technical arts and political institutions;[3] there is not a trace, either in his own writings or in credible tradition, of his having taken his philosophy from them. Thus the assertions as to the dependence of Greek on Oriental Philosophy, when we exclude those that are wholly untrustworthy, and rightly understand the rest, dwindle down to a very small number; even these are not altogether beyond question, and at most only prove that the Greeks in particular cases may have received certain impulses from the East, not that their whole philosophy was imported from thence.

(2) A more important result is supposed to be derived from the internal affinity of the Greek systems with Oriental doctrines. But even the two most recent advo-

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[1] Further details, infra.

[2] *Rep.* iv. 435 E. A passage on which Ritter, in his careful enquiry into the oriental origin of Greek philosophy, rightly lays much stress. —*Gesch. der Phil.* i. 153 sqq.

[3] Cf. Zeller, *Phil. der Gr.* Part ii. a, p. 358, note 2; also Brandis, *Gesch. der Gr.-röm. Phil.* i. 143.

cates of the theory are not agreed as to the precise meaning of this affinity. Gladisch, on the one hand,[1] thinks it evident that the principal pre-Socratic systems reproduced without any material alteration the theories of the universe of the five chief Oriental nations. The Philosophy of the Chinese, he considers, reappears in Pythagoreism; that of the Hindoos in the Eleatics; that of the Persians in Heracleitus; that of the Egyptians in Empedocles; that of the Jews in Anaxagoras. Röth, on the other hand,[2] no less distinctly affirms that ancient Greek speculation arose out of Egyptian creeds, intermingled, though not to any great extent except in the cases of Democritus and Plato, with the ideas of Zoroaster. In Aristotle, he says, Greek Philosophy first freed itself from these influences; but in Neo-Platonism Egyptian speculation once more renewed its youth, while, at the same time, the Zoroastrian doctrines, with a certain admixture of Egyptian notions, produced Christianity.

Theory of
Gladisch

If we examine impartially the historical facts, we shall find ourselves compelled to reject both these theories, and the improbability of an Eastern origin and character in regard to Greek Philosophy generally will more and more appear. The phenomenon which

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[1] *Einleitung in das Verständniss der Weltgeschichte*, 2 Th. 1841, 1844. *Das Mysterium der Ægyptischen Pyramiden und Obelisken*, 1846. On Heracleitus, *Zeitschrift für Alterthums-Wissenschaft*, 1846, No. 121 sq., 1848; No. 28 sqq. *Die verschleierte Isis*, 1849. *Empedokles und die Ægypter*, 1858. *Heracleitos und Zoroaster*, 1859. *Anaxagoras und die Israeliten*, 1864. *Die Hyperboreer und die alten Schinesen*, 1866. *Die Religion und die Philosophie in ihrer Weltgeschichtlichen Entwicklung*, 1852. In what follows I keep principally to this last treatise.

[2] *Gesch. uns. Abendl. Phil.* i. 74 sqq., 228 sq., 459 sq. In the second part of this work he ascribes to the doctrines of Zoroaster a share in Pythagoreism.

Gladisch thinks he perceives, even supposing it to exist, would admit of a twofold explanation. We might either ascribe it to an actual connection between the Pythagorean Philosophy and the Chinese, between the Eleatic and the Hindoo, &c.; or we might regard the coincidence of these doctrines as naturally resulting, without any external connection, from the universality of the Greek genius, or some other cause. In the latter case the phenomenon would give no clue to the origin of Greek Philosophy, nor, however striking such a fact might appear to us, would it add much to our historical knowledge of Greek science. If, on the other hand, there were really such an external historical connection as Gladisch assumes[1] between these Greek systems and their Eastern prototypes, we ought to be able in some way or other to prove the possibility of such a connection; to show, from a survey of the actual circumstances, that there was a probability of such accurate intelligence concerning Chinese and Hindoo doctrines having reached Pythagoras and Parmenides; we must explain the inconceivable phenomenon that the different Oriental ideas did not become intermingled on their way to Greece, nor in Greece itself, but arrived there and maintained themselves separately, side by side, so as to produce exactly the same number of Greek systems, and that in the very order corresponding to the geographical and historical position of the peoples among whom they arose. Lastly, we must give some kind of answer to the question how theories, so evidently borrowed from Parmenides by

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[1] Cf. especially, in reference to this, *Anaxagoras und die Israeliten*, x. sq.

Empedocles and Anaxagoras, and so deeply rooted in their own doctrines that they must be considered their scientific points of departure (e.g. the impossibility of an absolute origination or decease), could be derived in the case of one philosopher from India, in that of a second from Egypt, in that of a third from Palestine. All this appears equally impossible, whether we suppose the influence of Oriental doctrines on Greek Philosophy to have been indirect or direct. That it is impossible to believe in a direct influence of the kind Gladisch himself admits;[1] appealing, with justice, to the utterances of Aristotle and of the other ancient authors concerning the origin of the systems anterior to Plato, and urging the reciprocal interdependence of these systems. But does the theory become more probable if we assume that the Oriental element 'entered Philosophy through the instrumentality of Greek religion?'[2] Where do we find in Greek religion, especially in the religious tradition of the centuries which gave birth to the pre-Socratic Philosophy (except, indeed, in the dogma of transmigration), a trace of all the doctrines to which the philosophers are said to have been led by it? How is it credible that a speculative system like the Vedanta Philosophy should be communicated by means of Greek mythology to Parmenides; and Judaic monotheism, by means of Hellenic polytheism, to Anaxagoras? How could the Oriental doctrines after their convergence in the Greek religion have issued from it unchanged in this definite order? And if they had done so, how can that which the various philosophies produced from the same source (their national religion), even when they undoubtedly borrowed it one from the other, be referred to utterly different Oriental sources? It is easy to meet these objections, which might be greatly multiplied, by saying,[1] whether all this be possible, and how it may have come about, we will not here enquire, but content ourselves at present with simply establishing the facts. Such an answer might suffice if the evidence for the facts only included the hearing of unimpeachable witnesses, and a comparison of their testimony. But that is by no means the case. The proofs of the parallelism between Greek and Oriental doctrines which Gladisch claims to have discovered, would, under any circumstances, demand investigations much too complicated to leave the question of its possibility and reasonableness wholly untouched. If we consider his own representation of this parallelism, we are met at decisive points by such uncritical reliance on interpolated writings and untrustworthy statements, such confusion of earlier and later authorities, such arbitrary interpretation of the theories concerned, that it is plain we have to do not merely with the proof of the historical fact, but with a connection and interpretation extending much farther.[2] We become involved, as already remarked, in the following contradictions: that characteristics equally to be found in several Greek philosophers must have had an entirely different origin in every case; that doctrines evidently borrowed by one philosopher from another must have been communicated independently to both from an Eastern source, and to each man from a separate Eastern source;[1] that systems which evolved themselves out of one another, in a historic sequence which is indisputable, must each have merely reproduced what it had already received, irrespectively of that sequence, from this or that Oriental predecessor. How little this construction of Gladisch comports with actual facts may also be seen from the impossibility[2] of bringing into connection with it two such radical and important phenomena in the history of Greek Philosophy as the Ionic Physics before Heracleitus, and the Atomistic Philosophy.

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[1] *Einleitung in das Verständniss, &c.* ii. 376 sq. *Anax. und die Isr.* xi. sq.

[2] *Anax. und die Isr.* xiii.

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[1] Loc. cit. xiv.

[2] Cf. what is said, infra, of Heracleitus, of Empedocles, and of Anaxagoras; also in the text of this passage, as it appeared in the second and third editions, about the Pythagorean and Eleatic Philosophy (Zeller, *Phil. der Gr.* 3rd ed. p. 29 sq.) This I do not repeat here, not because Gladisch's counter-arguments seem to me unanswerable, but because a thorough refutation of his hypothesis would require more space than I can devote to it, and because the derivation of Pythagoreism from China, and the

Theory of Röth.

As to Röth, his view can only be properly considered in the examination of the separate Greek systems. So far as it is carried out, I am, however, unable to agree with it, because I fail to see in his exposition of Egyptian theology a faithful historical picture. I can-

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doctrines of Parmenides from India is really inconceivable, and has never been elsewhere entertained.

[1] Cf. supra. p. 36. Thus according to Gladisch, Pythagoras got his doctrine of Transmigration from China (where, however, it did not originate), and Empedocles his from Egypt.

[2] In regard to the Atomistic philosophy, Gladisch attempts to justify this (*Anax. und die Isr.* xiv.) by saying that it was developed from the Eleatic doctrine. But the dependence is in this case no other and no greater than in the case of Anaxagoras and Empedocles; and Atomistic has an equal right with their doctrines to be considered an independent system. The omission of Thales, Anaximander, and Anaximenes, Gladisch (loc. cit.) leaves unexplained. Yet Thales is the founder of Greek Philosophy, and Anaximander the immediate predecessor of Heracleitus.

not now enter into a discussion of the philosophy of religion, nor stop to refute the theory[1] that abstract concepts, such as spirit, matter, time and space, and not presentations of personal beings, formed the original content of the Egyptian religion, and other religions of antiquity. I must also leave the task of examining the results which Röth derives[2] from Oriental texts and hieroglyphic monuments to those better acquainted with the subject. For the purposes of the present enquiry, it is enough to notice that the affinity assumed by Röth between the Egyptian and Persian doctrines, and the myths and philosophic systems of the Greeks, can only be proved, even on the author's own showing, if we consent to repose unlimited confidence in untrustworthy witnesses, uncertain conjectures and groundless etymologies. If, indeed, each transference of the names of Greek gods to foreign deities were an adequate proof of the identity of these gods, the Greek religion would hardly be distinguishable from the Egyptian; if it were permissible to seek out barbarian etymologies, even where the Greek signification of a word is ready to hand,[3] we might perhaps suppose the whole mythology, together with the names of the gods, to have emigrated from the East to Greece;[4] if Iamblichus and Hermes

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[1] Loc. cit. p. 50 sq., 228, 131 sqq.

[2] e.g. p. 131 sqq., 278 sqq.

[3] As, for instance, when Röth derives Pan and Persephone from the Egyptian language; translating Pan as *Deus egressus*, the emanated creative spirit (loc. cit. 140, 284), and Persephone (p. 162) as the slayer of Perses, i.e. of Bore—Seth or Typhon; whereas it is clear that the root of Πὰν is πάω, Ion. πατέομαι, Lat. pasco; and that Περσεφόνη, as well as Πέρσης and Περσεύς, comes from πέρθω; and that Greek mythology says nothing of a creator spirit Pan, or of a Perses in the sense of Typhon (if even one of the Hesiodic Titans be so named), or of any slaying of this Perses by Persephone.

[4] Scarcely, however, even in

Trismegistus were classical authorities for Egyptian antiquity, we might congratulate ourselves on the ancient records[1] with which they acquaint us, and the Greek philosophical sayings which they profess to have discovered[2] in old Egyptian writings; if the Atomistic doctrine of Moschus the Phœnician were a historical fact, we might, like Röth,[3] attempt to find in the theories of Phœnician cosmology, respecting the primitive slime, the sources of a doctrine hitherto believed to have been derived from the metaphysic of the Eleatics. But if the universal principle of criticism be applicable to this, as to other cases—viz. that history accepts nothing as true the truth of which is not guaranteed by credible testimony, or by legitimate conclusions from such testimony—then this attempt of Röth will only show that the most indefatigable efforts are insufficient to prove a foreign origin in regard to the essential content of so indigenous a production as Greek science.[4]

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that case, with the facility of Röth, who on the strength of the above etymologies, and without citing any authority, transfers the whole mythus of the rape of Persephone and the wanderings of Demeter to the Egyptian mythology, in order then to assert that it first came from Egypt to the Greeks (loc. cit. p. 162).

[1] e.g. the book of Bitys, which Röth (p. 211 sqq.) (on the ground of a very suspicious passage in the work of the Pseudo-Iamblichus on the Mysteries) places in the eighteenth century before Christ. If this book ever existed, it was probably a late invention of the period of Alexandrian syncretism, and worth about as much, in the light of Egyptian historical evidence, as the book of Mormon is in regard to Jewish.

[2] For example, the distinction of νοῦς and ψυχή. Cf. Röth's *Anmerkungen*, p. 220 sq.

[3] Loc. cit. 274 sqq.

[4] A more detailed examination of Röth's hypotheses will find a fitting place in the chapter on the Pythagoreans; for, according to him, it was Pythagoras who transplanted the whole Egyptian science and theology into Greece. Cf. also what is said of Anaximander, infra.

A proof of this kind is, generally speaking, very difficult to establish when it is based solely on internal evidence. It may happen that not only particular notions and customs, but whole series of them may bear a resemblance to another series in some other sphere of civilisation; it may also happen that fundamental conceptions may seem to repeat themselves without thus affording adequate proof that they are historically interconnected. Under analogous conditions of development, and especially between races originally related to each other, many points of contact invariably arise, even when these races have no actual intercourse; chance often brings out surprising similarities in details; and among the more highly civilised races scarcely any two could be named between which striking parallels could not be drawn. But though it may be natural in that case to conjecture an external connection, the existence of this connection is only probable if the similarities are so great that they cannot be explained by the above more general causes. It must have been very astonishing to the followers of Alexander to find among the Brahmans not only their Dionysus and Heracles, but also their Hellenic philosophy; to hear of water being the origin of the world, as with Thales; of Deity permeating all things, as with Heracleitus; of a transmigration of souls, as with Pythagoras and Plato; of five elements, as with Aristotle; of the prohibition of flesh diet, as with Empedocles and the Orphics;[1] and no doubt Herodotus and his successors must have been often inclined to derive Greek doctrines and usages from Egypt. But for us, all this is not sufficient proof that Heracleitus, Plato, Thales and Aristotle borrowed their theorems from the Hindoos or Egyptians.

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[1] Cf. the accounts of Megasthenes, Aristobulus, Onesicritus and Nearchus in Strabo xv. 1, 58 sqq., p. 712 sqq.

It is not merely, however, the want of historical evidence which prevents our believing in the Oriental origin of Greek Philosophy; there are several positive reasons against the theory. One of the most decisive lies in the general character of that philosophy. The doctrines of the most ancient Greek philosophers have, as Ritter well observes,[1] all the simplicity and independence of first attempts; and their ulterior development is so continuous that the hypothesis of alien influences is never required to explain it. We see here no conflict of the original Hellenic spirit with foreign elements, no adaptation of misapprehended formulæ and conceptions, no return to scientific traditions of the past, in short, none of the phenomena by which, for example, in the Middle Ages, the dependence of philosophy on foreign sources is evinced. All developes itself quite naturally from the conditions of Greek national life, and we shall find that even those systems which have been supposed to be most deeply influenced by doctrines from without, are in all essential respects to be explained by the internal civilisation and spiritual horizon of the Hellenes. Such a feature would certainly be inexplicable if Greek Philosophy were really so much indebted to other countries as some writers both ancient and modern have believed. On this theory there would be another strange and unaccountable circumstance,—that the theological character of Oriental speculation should be entirely absent from Greek philosophy. Whatever science there was in Egypt, Babylonia or Persia, was in possession of the priestly caste, and had grown up in one mass with the religious doctrines and institutions. In regard to mathematics and astronomy, it is quite conceivable that Oriental science should have been detached from this its religious basis, and transplanted separately into foreign lands; but it is most improbable that the priests should have held theories about the primitive constituents and origin of the world, capable of being transmitted and adopted apart from their doctrines concerning the gods and mythology. Now in the most ancient Greek Philosophy we find no trace of Egyptian, Persian or Chaldæan mythology, and its connection even with Greek myths is very slight. Even the Pythagoreans and Empedocles only borrowed from the mysteries such doctrines as had no intimate relation with their philosophy (that is, their attempt at a scientific explanation of nature): neither the Pythagorean doctrine of numbers, nor the Pythagorean and Empedoclean cosmology, can be connected with any theological tradition as their source. The rest of the pre-Socratic philosophy does, indeed, remind us in certain isolated notions of the mythic cosmogony, but in the main it developed itself either quite independently of the religious belief, or in express opposition to it. How could this possibly be if Greek science were an offshoot of the sacerdotal wisdom of the East?

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[1] *Gesch. der Phil.* i. 172.

We must further enquire whether the Greeks at the time of their first attempts at Philosophy could have been taught anything considerable in this sphere by Orientals. There is no historical or even probable evidence to show that either of the Asiatic nations with which they came in contact possessed any philosophic science. We hear, indeed, of theological and cosmological notions, but all these, so far as they really appear to go back to antiquity, are so rude and fanciful that the Greeks could scarcely have received from them any impulse towards philosophic thought which their own myths could not just as well have afforded. The sacred books of Egypt probably contained only prescripts for ritual, ecclesiastical and civil laws, interspersed perhaps with religious myths; in the scanty notices remaining of their contents there is no trace of the scientific, dogmatic theology which modern writers have sought to discover.[1] To the Egyptian priests themselves, in the time of Herodotus, the thought of an Egyptian origin in regard to Greek Philosophy never seems to have occurred, eagerly as they strove, even then, to derive Greek myths, laws, and religious ceremonies from

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[1] Rōth, loc. cit. p. 112 sqq., and p. 122. He appeals to Clemens, *Strom.* vi. 633 B sqq. Sylb., where the Hermetic books being mentioned it is said: there are ten books. *τὰ εἰς τὴν τιμὴν ἀνήκοντα τῶν παρ' αὐτοῖς θεῶν καὶ τὴν Αἰγυπτίαν εὐσέβειαν περιέχοντα· οἷον περὶ θυμάτων, ἀπαρχῶν, ὕμνων, εὐχῶν, πομπῶν, ἑορτῶν καὶ τῶν τούτοις ὁμοίων*, and ten other books *περί τε νόμων καὶ θεῶν καὶ τῆς ὅλης παιδείας τῶν ἱερέων*. But that the contents of these books were even in part scientific, cannot be deduced from the words of Clemens; even the last-mentioned ten probably treated, not of the nature of the gods, but of religious worship, and perhaps, in connection with this, of mythology: when Clemens says that these writings contained the whole 'Philosophy' of the Egyptians, the word must be taken in the indeterminate sense of which I have spoken above, p. 1 sq. Moreover, we do not know in the least how old these books were, or whether they continued up to the time of Clemens without alterations and additions.

Egypt, and little as they shrank from the most transparent inventions[1] in pursuance of this end. The scientific discoveries which they claim to have given to the Greeks[2] are confined to astronomical determinations of time. That the doctrine of transmigration originated in Egypt is only a conjecture of Herodotus;[3] and when he says (ii. 109) that the Greeks appear to have learnt geometry there, he founds the assertion not on Egyptian statements, as Diodorus does, but on his own observation. This justifies the supposition that in the fifth century the Egyptians had not troubled themselves much about Greek or any other Philosophy. Even Plato, judging from the previously quoted passage in the fourth book of the 'Republic,' must have been ignorant of the existence of a Phœnician or Egyptian Philosophy. Nor does Aristotle seem to have been aware of the philosophic efforts of the Egyptians, willing as he was to acknowledge them as forerunners of the Greeks in mathematics and astronomy.[4] Democritus assures us that he himself, in geometrical knowledge, was quite a match for the Egyptian sages whose acquaintance he made.[1] So late as the time of Diodorus, when Greek science had long been naturalised in Egypt, and the Egyptians in consequence claimed for themselves the visits of Plato, Pythagoras, and Democritus,[2] that which the Greeks are said to have derived from Egypt is confined to mathematical and technical knowledge, civil laws, religious institutions, and myths;[3] these only are referred to in the assertion of the Thebans (i. 50) 'that Philosophy and the accurate knowledge of the stars was first invented among them,' for the word Philosophy is here equivalent to Astronomy.

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[1] Thus (ii. 177) Solon is said to have borrowed one of his laws from Amasis, who came to the throne twenty years later than the date of Solon's code; and (c. 118) the priests assure the historian that what they related to him about Helen they had heard from Menelaus' own mouth. We have already seen examples of this procedure, supra, p. 27, note 1.

[2] Herod. ii. 4.

[3] ii. 123.

[4] To the astronomical observations of the Egyptians (on the conjunctions of the planets with each other and with fixed stars) he appeals in *Meteorol.* i. 6, 343, b 28; and in *Metaph.* i. 1, 981, b 23 he says: *διὸ περὶ Αἴγυπτον αἱ μαθηματικαὶ πρῶτον τέχναι συνέστησαν. ἐκεῖ γὰρ ἀφείθη σχολάζειν τὸ τῶν ἱερέων ἔθνος.* This very passage, however, makes it probable that Aristotle knew nothing of any philosophic enquiry pursued in Egypt. He contends loc. cit. that knowledge is on a higher level when it is pursued only for the end of knowing, than when it serves the purposes of practical necessity, and observes, in connection with this, that purely theoretic sciences therefore first arose in places where people were sufficiently free from anxiety about the necessaries of

Admitting, then, that the Egyptian mythologists referred to by Diodorus may have given to the conceptions of the gods a naturalistic interpretation in the spirit of the Stoics;[4] that later syncretists (like the

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life to be able to devote themselves to such sciences. The above-quoted words indirectly confirm this assertion. Had Aristotle considered Philosophy as well as Mathematics to be an Egyptian product, he would have been particularly unlikely to omit it in this connection, since it is Philosophy of which he asserts that as a purely theoretical science it stands higher than all merely technical knowledge. That the rudiments of astronomy came to the Greeks from the barbarians, and more particularly from the Syrians and Egyptians, we are told in the *Epinomis* of Plato 986 E sq. 987 D sq. Similarly Strabo xvii. 1. 3, p. 787, ascribes the invention of Geometry to the Egyptians, and that of Arithmetic to the Phœnicians; perhaps Eudemus had already expressed the same opinion, if indeed Proclus in Euclid. 19, o (64 f. Friedl.) took this statement from him.

[1] In the fragment in Clemens, *Strom.* i. 304 A, where he says of himself after mentioning his distant journeys: *καὶ λογίων ἀνθρώπων πλείστων ἐσήκουσα καὶ γραμμέων ξυνθέσιος μετὰ ἀποδέξιος οὐδείς κώ με παρήλλαξε, οὐδ' οἱ Αἰγυπτίων καλεόμενοι Ἀρπεδονάπται.* The interpretation of the last word is questionable, but the term must in any case include those of the Egyptian sages who possessed the most geometrical knowledge.

[2] i. 96, 98.

[3] Cf. c. 16, 69, 81, 96 sqq.

[4] Diod. i. 11 sq.

author of the book on the mysteries of the Egyptians, and the theologians quoted by Damascius)[1] may have imported their own speculations into Egyptian myths; that there may have existed in the time of Posidonius a Phœnician manuscript reputed to be of great antiquity, and passing under the name of the philosopher Moschus or Mochus;[2] that Philo of Byblus, under the mask of Sanchuniathon, may have constructed a rude cosmology from Phœnician and Greek myths, from the Mosaic history of creation, and from confused reminiscences of Philosophy—such questionable witnesses can in no way prove the real existence of an Egyptian and Phœnician Philosophy.

Supposing, however, that among these nations, at the time that the Greeks became acquainted with them, philosophic doctrines had been found, the transmission of these doctrines to Greece was not at all so easy as may perhaps be imagined. Philosophic conceptions, especially in the childhood of Philosophy, are closely bound up with their expression in language, and the knowledge of foreign languages was rarely to be met with among the Greeks. On the other hand, the interpreters, educated as a rule for nothing but commercial intercourse and the explanation of curiosities, were of little use in enabling people to understand instruction in philosophy. Moreover, there is not a single allusion, on which we can rely, to the use of Oriental works by Greek philosophers, or to any translations of such works.

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[1] *De Princ.* c. 125. Damascius expressly calls them *οἱ Αἰγύπτιοι καθ' ἡμᾶς φιλόσοφοι γεγονότες*. They are therefore the most untrustworthy source for the history of Egyptian antiquity.

[2] Vide infra, the chapter on Democritus.

If we ask ourselves, lastly, by what means the doctrines of the Hindoos and the other nations of Eastern Asia could have been carried into Greece before the time of Alexander, we shall find that the matter presents numerous difficulties. All such considerations as these would, of course, yield to well-attested facts; but it is a different matter where we are concerned, not with historical facts, but for the present with mere conjectures. If the Eastern origin of Greek Philosophy were to be maintained by trustworthy evidence, or by its own internal characteristics, our conception of the scientific condition of the Eastern nations and of the relation in which the Greeks stood to them must be formed in accordance with that fact; but since the fact in itself is neither demonstrable nor probable, it is rendered still more improbable by its want of harmony with what we know from other sources on these two points.

§ II.—*The Native Sources of Greek Philosophy.*

RELIGION.

We have no need, however, to seek for foreign antecedents: the philosophic science of the Greeks is fully explained by the genius, resources, and state of civilisation of the Hellenic tribes. If ever there was a people capable of creating its own science, the Greeks were that people. In the most ancient records of their culture, the Homeric Poems, we already meet with that freedom and clearness of spirit, that sobriety and moderation, that feeling for the beautiful and harmonious, which place these poems so distinctly above the heroic legends of all other nations without exception. Of scientific endeavour, there is nothing as yet; no necessity is felt to investigate the natural causes of things; the writer is content to refer them to personal authors and divine powers, the explanation that comes uppermost in the childhood of mankind. The technical arts too, which support science, are in a very elementary stage; in the Homeric period even writing is unknown. But when we consider the glorious heroes of the Homeric Poems—when we see how everything, each phenomenon of nature, and each event of human life, is set forth in pictures which are as true as they are artistically perfect—when we study the simple and beautiful development of these masterpieces, the grandeur of their plan, and the harmonious accomplishment of their purposes, we can no longer wonder that a nation capable of apprehending the world with an eye so open, and a spirit so unclouded, of dominating the confused mass of phenomena with so admirable a sense of form, of moving in life so freely and surely—that such a nation should soon turn its attention to science, and in that field should not be satisfied merely with amassing knowledge and observations, but should strive to combine particulars into a whole, to find an intellectual focus for isolated phenomena, to form a theory of the universe based on clear conceptions, and possessing internal unity; to produce, in short, a Philosophy. How natural is the flow of events even in the Homeric world of gods! We find ourselves, indeed, in the wonderland of imagination, but how seldom are we reminded by anything fantastic or monstrous (so frequent and disturbing an element in Oriental and Northern mythology) that this fabled world is wanting in the conditions of reality! Amidst all the poetry how clearly we recognise that sane and vigorous realism, that fine perception of what is harmonious and natural, to which, in later times, after deeper study of the universe and of man, this same Homeric heaven necessarily proved such a stumbling-block. Thus, although the intellectual culture of the Homeric period is separated by a wide interval from the rise of philosophy, we can already trace in it the peculiar genius out of which Philosophy sprang.

It is the farther development of this genius as manifested in the sphere of religion, of moral and civil life, and in the general cultivation of taste and of the intellect, which constitutes the historical preparation for Greek Philosophy.

The religion of the Greeks, like every positive religion, stands to the philosophy of that people in a relation partly of affinity and partly of opposition. What distinguishes it from the religions of all other races, however, is the freedom which from the very beginning it allowed to the evolution of philosophic thought. If we turn our attention first to the public ritual and popular faith of the Hellenes, as it is represented to us in its oldest and most authentic records, the poems of Homer and Hesiod, its importance in the development of philosophy cannot be mistaken. The religious presentation is always, and so also among the Greeks, the form in which the interdependence of all phenomena and the rule of invisible powers and universal laws first attains to consciousness. However great may be the distance between faith in a divine government of the world, and the scientific knowledge and explanation of the universe as a connected whole, they have at any rate something in common. Religious faith, even under the polytheistic form it assumed in Greece, implies that what exists and happens in the world depends on certain causes concealed from sensuous perception. Nor is this all. The power of the gods must necessarily extend over all parts of the world, and the plurality of the gods is reduced to unity by the dominion of Zeus and the irresistible power of Fate. Thus the interdependence of the universe is proclaimed; all phenomena are co-ordinated under the same general causes; by degrees fear of the power of the gods and of relentless Fate yields to confidence in the divine goodness and wisdom, and a fresh problem presents itself to reflection—viz. to pursue the traces of this wisdom in the laws of the universe. Philosophy, indeed, has itself been at work in this purification of the popular faith, but the religious notion first contained the germs from which the purer conceptions of Philosophy were afterwards developed.

The peculiar nature of Greek religious belief, also, was not without influence on Greek Philosophy. The Greek religion belongs in its general character to the class of natural religions; the Divine, as is sufficiently proved by the plurality of gods, is represented under a natural figure essentially of the same kind as the Finite, and only exalted above it in degree. Man, therefore, does not need to raise himself above the world that surrounds him, and above his own actual nature, that he may enter into communion with the Deity; he feels himself related to God from the very outset. No internal change of his mode of thought, no struggle with his natural impulses and inclinations, is demanded of him; on the contrary, all that is in human nature is legitimate in the sight of God—the most godlike man is he who cultivates his human powers most effectually, and religious duty essentially consists in man's doing to the glory of God that which is according to his own nature. The same stand-point is evident in the Philosophy of the Greeks, as will be shown further on; and, though the philosophers as a rule, took few of their doctrines directly from religious tradition, and were often openly at variance with the popular faith, still it is clear that the mode of thought to which the Hellenes had become accustomed in their religion was not without influence on their scientific tendencies. It was inevitable that from the naturalistic religion of Greece there should arise, in the first instance, a naturalistic philosophy.

The Greek religion, furthermore, is distinguished from other naturalistic religions in that it assigns the highest place in existence neither to external nature, nor to the sensuous nature of man, as such, but to human nature that is beautiful and transfigured by spirit. Man is not, as in the East, so entirely the slave of external impressions that he loses his own independence in the forces of nature, and feels that he is but a part of nature, irresistibly involved in its vicissitudes. Neither does he seek his satisfaction in the unbridled freedom of rude and half-savage races. But, while living and acting with the full sense of liberty, he considers that the highest exercise of that liberty is to obey the universal order as the law of his own nature. Although, therefore, in this religion, Deity is conceived as similar to man, it is not common human nature that is ascribed to it. Not only is the outer form of the gods idealised as the image of the purest beauty, but their essential nature, especially in the case of the Hellenic gods proper, is formed by ideals of human activities. The relation of the Greek to his gods was therefore free and happy to an extent that we find in no other nation, because his own nature was reflected and idealised in them; so that, in contemplating them, he found himself at once attracted by affinity, and elevated above the limits of his own existence, without having to purchase this boon by the pain and trouble of an internal conflict. Thus, the sensuous and natural become the immediate embodiment of the spiritual; the whole religion assumes an æsthetic character, religious ideas take the form of poetry; divine worship and the object of that worship are made material for art; and though we are still, speaking generally, on the level of naturalistic religion, nature is only regarded as the manifestation of Deity, because of the spirit which reveals itself in nature. This idealistic character of the Greek religion was no doubt of the highest importance in the origin and formation of Greek philosophy. The exercise of the imagination, which gives universal significance to the particulars of sense, is the preparatory stage for the exercise of the intellect which, abstracting from the particular as such, seeks for the general essence and universal causes of phenomena. While, therefore, the Greek religion was based upon an ideal and æsthetic view of the world, and encouraged to the utmost all artistic activity in setting forth this view, it must have had indirectly a stimulating and emancipating effect upon thought, and have prepared the way for the scientific study of things. From a *material* point of view, this idealistic tendency of religion was beneficial principally to Ethics; but from a *formal* point of view, the influence of religion extended to all parts of Philosophy; for Philosophy presupposes and requires an endeavour to treat the sensible as a manifestation of spirit, and to trace it back to spiritual causes. Some of the Greek philosophers may possibly have been too rash in their procedure in that respect; but this we shall not at present consider. The more readily we admit that their doctrines often give us the impression of a philosophic poem full of bold inventions, rather than a work of science, the more clearly we shall see the connection of those doctrines with the artistic genius of the Greek nation, and with the æsthetic character of its religion.

But although Greek Philosophy may owe much to religion, it owes more to the circumstance that its dependence on religion never went so far as to prevent, or essentially to restrict, the free movement of science. The Greeks had no hierarchy, and no inviolable dogmatic code. The sacerdotal functions were not with them the exclusive property of a class, nor were the priests the only mediators between the gods and men; but each individual for himself, and each community for itself, had a right to offer up sacrifices and prayers. In Homer, we find kings and chiefs sacrificing for their subjects, fathers for their families, each person for himself, without the intervention of priests. Even at a later period, when the development of a public cult in temples gave more importance to the sacerdotal order, the functions of the priests were always limited to certain offerings and ceremonial observances in their particular localities; prayers and sacrifices were still offered by the laity, and a whole class of matters relating to religious ceremonial were left, not to priests, but to public functionaries designated by election, or by lot—in part in combination with officers of the community or state—to individuals and heads of families. The priests, therefore, as a class, could never acquire an influential position in Greece at all comparable with that which they enjoyed among the Oriental nations.[1] Priests of certain temples, it is true, did attain to considerable importance on account of the oracles connected with those temples, but, on the whole, the priestly office conferred far more honour than influence; it was a political dignity, in respect to which reputation and external qualifications were more regarded than any particular mental capability; and Plato[2] is quite in harmony with the spirit of his country when he makes the priests, in spite of all the honours accorded to them, merely servants of the commonwealth.[1] But where there is no hierarchy, a dogmatic code, in the sense of a general law of faith, is manifestly impossible; for there are no organs to frame and maintain it. Even in itself, however, it would have been contrary to the essence of Greek religion. That religion is not a finished and perfected system that had grown up from one particular spot. The ideas and traditions which the Greek races brought with them from their original abodes were carried by each individual tribe, community and family into different surroundings, and subjected to influences of the most various kinds. Thus, there arose a multiplicity of local rites and legends; and from these, a common Hellenic faith gradually developed itself, not by the systematising of theology, but by a free convergence of minds; in which convergence the most important factor, beside the personal intercourse and religious ceremonies of the national games and festivals, was Art, and above all, Poetry. This explains the fact, that in Greece there was never, properly speaking, a system of religious doctrine generally admitted, but only a mythology; and that the conception of orthodoxy was absolutely unknown. Every one was indeed required to honour the gods of the State; and those who were convicted of withholding the prescribed honours, or of trying to overthrow the religion of the State, were often visited with the severest punishments. But though Philosophy itself was thus hardly dealt with, in the person of some of its representatives, on the whole, the relation of individuals to the faith of the community was far freer than among nations who possessed a definite confession of faith guarded by a powerful priesthood. The severity of the Greeks against religious innovation had immediate reference not to doctrines, but to cult; only so far as a doctrine seemed to involve consequences prejudicial to public worship did it become the object of attack. As to theological opinions, properly so called, they were left unmolested. The Greek religion possessed neither a body of theological doctrine nor written sacred records. It was founded entirely upon traditions respecting the temples, descriptions of the poets, and notions of the people: moreover, there was scarcely any tradition which was not contradicted by others, and in that way lost much of its authority. Thus, in Greece, faith was too indefinite and elastic in its form to admit of its exercising upon reason either an internal supremacy, or an external restraint, to the extent that we find to have been the case in other countries.

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[1] This, by the way, is one of the most striking arguments against the hypothesis of any considerable transmission of cults and myths into Greece from the East; for these Oriental cults are so closely bound up with the hierarchical system that they could only have been transmitted in connection with it. If this had anywhere been the case, we should find the importance of the priests become greater the farther we went back into antiquity, whereas in point of fact it is exactly the contrary.

[2] *Polit.* 290 C.

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[1] Cf. Hermann. *Lehrbuch der Griech. Antiquitäten*, ii. 158 sqq., 44 sq. for more detailed proofs of the above statements.

This free attitude of Greek science in respect to religion was full of important results, as will be evident if we consider what would have become of Greek Philosophy, and indirectly of our own, without this freedom. All the historical analogies that we can adduce will give us but one answer; namely, that the Greeks would then have been as little able as the Oriental nations to attain an independent philosophic science. The speculative impulse might indeed have been awake, but, jealously watched as it would have been by theology, internally cramped by religious presuppositions, and shackled in its free movement, thought could scarcely have produced anything more than a religious speculation akin to the ancient theologic cosmologies; and even supposing that at a much later period it had turned to other questions, it could never have had the acuteness, freshness, and freedom by which the Philosophy of Greece became the teacher of all the ages. The Hindoos were the most speculative nation of the East, and their civilisation was of the highest antiquity, yet how greatly inferior were they, as regards philosophic achievement, to the Greeks! The same must be said of the Christian and Mohammedan Philosophy in the Middle Ages, though this had the advantage of being preceded by the Greek. In both cases, the principal cause of the inferiority manifestly lay in the dependence of science upon positive dogmas; and the Greeks are to be considered as singularly fortunate in having escaped this dependence through the force of their peculiar genius, and the favourable course of their historical development.

It has been usually supposed that between Philosophy and the religion of the mysteries a closer bond exists. In the mysteries, according to this view, a purer, or at any rate a more speculative, theology was imparted to the initiated; and, by means of the mysteries, the secret doctrines of Eastern priests were transmitted to the Greek philosophers, and through them to the Greek people in general. But this theory has no better foundation than the one we have just been discussing in regard to Oriental Science. It is proved beyond a doubt, by the most recent and thorough investigations[1] of the subject, that originally no philosophic doctrines were conveyed in these religious ceremonies; and that at a later period, when such doctrines began to be connected with the mysteries, this occurred under the influence of scientific researches. Philosophy, therefore, should be regarded rather as having imparted wisdom to the mysteries than as having received it from them. The mysteries were originally, as we have every reason to believe, ritualistic solemnities, which, in their religious import and character, differed nothing from the public worship of the gods, and were only carried on in secret because they were designed for some particular community, sex, or class, to the exclusion of any other, or because the nature of the divinities to whom they were sacred demanded this form of cult. The first, for example, applies to the mysteries of the Idæan Zeus and the Argive Here, the second to the Eleusinian mysteries, and especially to the secret rites of the Chthonian deities. Mysteries first appeared in a certain opposition to public religion, partly because elder cults and forms of worship which had gradually disappeared from the one were maintained in the other, and partly because foreign rites like those of the Thracian Dionysus and the Phrygian Cybele were introduced as private cults under the form of mysteries, and blended themselves, in course of time, more or less with the ancient secret rites. But in neither case can the mysteries have contained philosophic theorems, or doctrines of a purer theology essentially transcending the popular faith.[1] This is sufficiently proved by the circumstance that the mysteries most frequently celebrated were accessible to all the Greeks. For even had the priests possessed any higher wisdom, how could they have imparted it to such a mixed multitude? And what are we to think of a secret philosophic doctrine into which a whole nation could be initiated without a long course of previous instruction, and without having its faith shaken in the traditional mythology? Speaking generally, it is not at all in keeping with the habits of the ancients to take advantage of ceremonial observances for the purpose of instructing the people by means of religious discourses. A Julian might make the attempt in imitation of Christian customs; but in classical times there is not a single instance of it, nor does any trustworthy witness ever assert that the mysteries were designed for the instruction of those who took part in them. Their particular end appears far more in those sacred rites, the witnessing of which was the privilege of the initiated (Epoptæ); whatever oral communication was combined with these ceremonies seems to have been restricted to short liturgical formulæ, directions for the performance of the holy rites, and sacred traditions (*ἱεροὶ λόγοι*), like those which were elsewhere connected with particular acts of worship; tales about the founding of cults and holy places, about the names, origin, and history of the gods to whom this worship was sacred; in a word, mythological explanations of the cult given by the priests, or even by laymen, to those who asked for them. These liturgical and mythological elements were afterwards made use of to combine philosophical and theological doctrines with the mysteries, but that such was the case from the beginning is a theory without foundation. There is no trustworthy authority for it, and on general grounds it is unlikely that the mythopœic imagination should ever have been dominated by philosophic points of view; or that at a later period there should have been introduced into mystic usages and traditions ideas and hypotheses which the scientific reflection of the Greeks had not as yet attained. In course of time, indeed, with the deepening of the moral consciousness, the mysteries gradually acquired a higher signification. When the school of the Orphics, whose doctrines from the first are parallel to Greek Philosophy,[1] was founded in the sixth century before Christ, or even earlier, the influence of the philosophers upon this mystic theology seems to have been far greater than the reaction of the theologians upon Philosophy; and the more we consider particular detail, the more doubtful it becomes whether on the whole Philosophy ever borrowed anything considerable from the mysteries or mystic doctrines.

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[1] Among which the following have been chiefly consulted: Lobeck's fundamental work (*Aglaophamus*, 1829), and the short but thorough exposition of Hermann (*Griech. Antiq.* ii. 149 sqq.), especially Preller's *Demeter und Persephone*, as well as his investigations in Pauly's *Real-Encyklopædie der Klass. Alterth.* (under the headings *Mythologie*, *Mysteria*, *Eleusinia*, *Orpheus*); lastly, the *Griechische Mythologie* of the same author. On the mysteries in general, cf. also Hegel's *Phil. der Geschichte*, 301 sq.; *Æsthetik*, ii. 57 sq.; *Phil. der Rel.* ii. 150 sqq.

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[1] As Lobeck, loc. cit. i. 6 sqq., has exhaustively shown. Leibniz, with the sound historical judgment which distinguishes him, expresses himself to the same effect in the Preface to the *Theodicee*, section 2.

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[1] The first certain trace of the Orphic writings, and of the Orphico-Dionysiac consecrations, is to be found in the well-attested statement (vide Lobeck, loc. cit i. 331 sqq., 397 sqq., 692 sqq.; cf. Gerhard, *Ueber Orpheus und die Orphiker*, *Abhandlungen der Berl. Acad.* 1861; *Hist. Phil. Kl.* p. 22, 75; Schuster, *De vet. Orphicæ theogoniæ indole*, 1869, p. 46 sqq.) that Onomacritus (who resided at the court of Pisistratus and his sons, and with two or three other persons, undertook the collection of the Homeric poems) published, under the names of Orpheus and Musæus, oracular sayings and hymns (τελεταὶ) which he had himself composed. This forgery falls somewhere between 540 and 520 B.C. It is probable, however, not only that Orphic hymns and oracles had been in circulation previously to this, but that the union of the Dionysiac mysteries with the Orphic poetry had long ago been accomplished. Two or three generations later, the names of the Orphics and Bacchics were used

There are two points especially, in regard to which the mysteries are supposed to have exercised an important influence on Philosophy: these are Monotheism and the hope of a future life. A speculative interpretation has also been given to some other doctrines, but they appear to contain nothing beyond the common

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by Herodotus (ii. 81) as identical, and Philolaus appeals in support of the doctrine of transmigration (vide *infra*, *Pythag.*) to the utterances of the ancient theologians and soothsayers, by whom we must chiefly understand Orpheus and the other founders of the Orphic mysteries. Aristotle's testimony certainly cannot be adduced in favour of the higher antiquity of the Orphic theology. Philoponus indeed observes (*De an.* F, 5, in reference to a passage from Aristotle, *De an.* i. 5, 410, b. 28) that Aristotle, speaking of the Orphic poems, says the poems '*called*' Orphic—*ἐπειδὴ μὴ δοκεῖ Ὀρφέως εἶναι τὰ ἔπη, ὡς καὶ αὐτὸς ἐν τοῖς περὶ φιλοσοφίας λέγει · αὐτοῦ μὲν γάρ εἰσι τὰ δόγματα · ταῦτά δέ φησιν* (for which we ought, most likely, to read *φασὶν*) *ὄνομα κρεῖττον ἐνέπεσε κατατεῖναι* (read *Ὀνομάκριτον ἐν ἔπεσι καταθεῖναι*). But the words *αὐτοῦ μὲν γάρ εἰσι τὰ δόγματα* show by their form that they are not a quotation from Aristotle, but a remark of Philoponus; and he is probably only repeating a Neo-Platonic expedient, by which the Aristotelian criticism of the Orphic poems was to be rendered harmless; that Aristotle never so expressed himself is clear, from the passage in Cicero, *N. D.* i. 38, 107, which probably refers to the same writing of Aristotle: *Orpheum Poëtam docet Aristoteles nunquam fuisse.* The Orphic theogony is not ascribed to Onomacritus; other Orphic writings are said to have been composed by Cercops, the Pythagorean Brontinus, Zopyrus of Heraclea (the same who worked with Onomacritus at the edition of Homer), Prodicus of Samos, and others. (Suidas, Ὀρφ. Clemens, *Strom.* i. 333 A: cf. Schuster loc. cit. and p. 55 sq. For further remarks vide *infra.*)

and ordinary thoughts of all mankind.[1] Even, however, in these two cases, the influence seems neither so certain nor so considerable as has commonly been believed. In regard to the unity of God, the theistic conception proper is as little to be found in the mystic as in the popular theology. It is impossible to imagine how the unity of God in the Jewish or Christian sense[2] could be inculcated at the feasts of the Eleusinian deities, or of the Cabiri, or of Dionysus. It is a different matter, certainly, in respect to the pantheism which appears in a fragment of the Orphic theogony,[3] where Zeus is described as the beginning, middle, and end of all things, the root of the earth and sky, the substance and essence of air and of fire, the sun and moon, male and female; where the sky is called his head, the sun and moon are his eyes, the air is his breast, the earth his body, the lower world his foot, the æther his infallible, royal, omniscient reason. Such a pantheism was not incompatible with polytheism, a soil which the mysteries never quitted. As the gods of polytheism were in truth only the various parts and forces of the world, the different spheres of nature and of human life, it is natural that the relations of these spheres among themselves, and the preponderance of one of them over others, should in time be brought to light; and, therefore, in all highly developed naturalistic religions, we see that kindred deities become blended together, and the whole polytheistic Olympus is resolved into the general conception of an all-embracing divine essence (θεῖον). But the Greek religion, because of its plastic character, is just one of those which most resists this fusion of definite forms of deity. In Greece, consequently, the idea of the divine unity was arrived at less by way of syncretism than of criticism; not by blending the many gods into one, but by combating the principle of polytheism. The Stoics and their successors were the first who sought to reconcile polytheism with their philosophic pantheism, by giving a syncretic interpretation to polytheism; the older pantheism of Xenophanes was, on the contrary, bitterly and openly hostile to the doctrine of the plurality of gods. The pantheism of the Orphic poems, in the form above described, is probably much later than the first beginnings of Orphic literature. The Διαθῆκαι are certainly not anterior to the Alexandrian Syncretism; nor can the passage respecting the theogony, as it now stands, date from the time of Onomacritus, to which Lobeck[1] assigns the greater part of the poem. For this passage was in close connection with the story of Phanes-Ericapæus, devoured by Zeus. Zeus includes all things in himself, because he swallowed the already created world, or Phanes, that he might then produce all things from himself. We shall presently show that the swallowing of Phanes[1] originally formed no part of the Orphic theogony. We must, therefore, in all cases distinguish the original text of the Orphic passage from the modifications it may afterwards have undergone. As part of the original text we may apparently claim the verse so frequently quoted,[2] and which is probably referred to by Plato:[3]

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[1] For example, the mythus of the slaying of Zagreus by the Titans (for further details cf. Lobeck, i. 615 sqq.), to which the Neo-Platonists, and before them even the Stoics, had given a philosophic interpretation, but which in its original meaning was probably only a rather crude variation of the well-worn theme of the death of Nature in winter, with which the thought of the decay of youth and its beauty was connected. This myth had no influence on the earlier philosophy, even if we suppose Empedocles to have made allusion to it—v. 70 (142).

[2] We find the unity of God in this sense affirmed in so-called Orphic fragments (*Orphica*, ed. Hermann, Fr. 1–3), of which some were probably, and others certainly, composed or altered by Alexandrian Jews.

[3] Vide Lobeck, p. 520 sqq.; and Hermann, Fr. 6. Similarly the fragment from the Διαθῆκαι (in Lobeck, p. 440; in Hermann, Fr. 4) was εἷς Ζεὺς, εἷς Ἀΐδης, εἷς Ἥλιος, εἷς Διόνυσος, εἷς θεὸς ἐν πάντεσσι.

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[1] Loc. cit. 611.

Ζεὺς κεφαλή, Ζεὺς μέσσα, Διὸς δ' ἐκ πάντα τέτυκται.[4]

The idea in this verse, however, and other similar ideas to be found in those portions of the Orphic writings supposed to be ancient, contain nothing essentially in advance of a conception familiar to Greek religion, and the gist of which was already expressed by Homer when he calls Zeus the Father of gods and men.[5] The unity of the divine element which polytheism itself recognises, was made concrete in Zeus as king of the gods; and so far, all that exists and all that happens is ultimately referred to Zeus. This idea may perhaps be expressed by calling Zeus the beginning, middle, and end of all things; but the expression certainly does not imply that Zeus is himself the ideal complex (*Inbegriff*) of all things.[1] There is consequently no evidence that the standpoint of the religious notion, which conceives the gods as personal beings, side by side with the world, has here been exchanged for that of philosophic speculation, which regards them as representing the general essence of the universe.

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[1] In the enquiry into the Orphic cosmogony, infra.

[2] Ap. Proclus in *Timæus*, 95 F, and the Platonic scholiast, p. 451, Bekk.

[3] *Laws*, iv. 715 E. Further references as to the employment of this verse by the Stoics, Platonists, Neo-Pythagoreans and others, are given by Lobeck, p. 529 sq.

[4] This theory is supported by the circumstance that the words quoted from Orpheus by Proclus in *Timæus*, 310 D; *Plat. Theol.* 17, 8, p. 363: τῷ δὲ Δίκη πολύποινος ἐφείπετο, coincide with the Platonic passage. Δίκη is also called πολύποινος in Parmenides, v. 14.

[5] Cf. also Terpander (about 650 B.C.), Fr. 4: Ζεῦ πάντων ἀρχὰ πάντων ἀγήτωρ.

The case is somewhat different in regard to the second point in question, belief in immortality. The doctrine of metempsychosis seems really to have passed from the theology of the mysteries into Philosophy. Even this doctrine, however, was in all probability originally connected, not with all, but only with the Bacchic and Orphic mysteries. Those of Eleusis, being sacred to the Chthonian divinities, were regarded as specially important in their influence upon man's future life. The Homeric hymn to Demeter already speaks of the great difference in the other world between the lots of the initiated and uninitiated;[2] and there are later eulogies of these mysteries, from which it is clear that they guaranteed happiness not only in this life, but in the life to come.[3] There is nothing here, however, to imply that the souls of the initiated are to come to life again, or that they are immortal in any other sense than was admitted by the ordinary faith of the Greeks.

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[1] Even monotheism allows expressions such as *ἐξ αὐτοῦ καὶ δι' αὐτοῦ καὶ εἰς αὐτὸν τὰ πάντα* (Romans xi. 36)—*ἐν αὐτῷ ζῶμεν καὶ κινούμεθα καὶ ἐσμέν* (Apg. 17, 28), without meaning by them that the Finite is actually merged in Deity.

[2] v. 480 sqq.

ὄλβιος, ὃς τάδ' ὄπωπεν ἐπιχθονίων ἀνθρώπων·
ὃς δ' ἀτελὴς ἱερῶν, ὃς τ' ἔμμορος, οὔποθ' ὁμοίην
αἶσαν ἔχει, φθίμενός περ, ὑπὸ ζόφῳ εὐρώεντι.

[3] Cf. the references in Lobeck, i. 69 sqq.

In this world wealth and fruitful fields[1] were expected from Demeter and her daughters in return for worship rendered to them; and in a similar manner, after death, the partakers of the mysteries were assured that they should dwell in Hades, in closest proximity to the divinities they had honoured, while the uninitiated were threatened with being cast into a marsh.[2] If these rude notions, at a later period, and among the more educated, received a spiritual interpretation,[3] there is no reason to suppose that this was so originally, or that the initiated were promised anything in the future except the favour of the infernal gods; the popular opinions about Hades remained quite unaffected by them. Even Pindar's celebrated utterances carry us no farther. For in saying that the partakers of the Eleusinian mysteries know the beginning and end of their life,[4] he does not assert the doctrine of transmigration,[5] and though in other passages this doctrine is undoubtedly brought forward,[6] it is still questionable whether the poet borrowed it from the Eleusinian theology; and even if he did apply the Eleusinian myths and symbols in this sense, it would not certainly follow that such was their original meaning.[1] In the Orphic theology, on the contrary, transmigration is clearly to be found, and the probabilities are very strongly against its having come there through the medium of the philosophers. Several writers mention Pherecydes as the first who taught immortality,[2] or more precisely, transmigration;[3] but the testimony of Cicero and other later authors is not sufficient, in the absence of older evidence,[4] to prove this statement. Even if we admit the probability that Pherecydes spoke of transmigration, the assertion of his having been the first to do so rests only on the fact that no previous writings are known to contain that doctrine. Still more uncertain is the theory[1] that Pythagoras was the first to introduce it. Heracleitus clearly presupposes this; Philolaus expressly appeals to the ancient theologians and soothsayers[2] for the theory that souls were fettered to the body, and as it were buried in it, as a punishment. Plato[3] derives the same theory from the mysteries, and more particularly from the Orphic mysteries; and Pindar teaches that certain favourites of the gods are to be permitted to return to the upper world, and that those who thrice have led a blameless life will be sent to the islands of the blest in the kingdom of Cronos.[4] In this last representation, we perceive an alteration in the doctrine; for whereas the return to corporeal life is elsewhere always regarded as a punishment and a means of improvement, in Pindar it appears as a privilege accorded only to the best, giving them an opportunity of earning higher happiness in the islands of the blest, instead of the inferior happiness of Hades. But this use of the doctrine presupposes the doctrine itself, and according to the quotations from Plato and Philolaus, we must assume that Pindar derived it from the Orphic mysteries. It is certainly conceivable that it might still have reached the mysteries through Pythagoreism, which must early have been connected with the Orphic cult.[1] But the most ancient testimonies, and the Pythagoreans themselves, refer it solely to the mysteries; and it is besides very doubtful whether the Pythagorean doctrines could have been prevalent in Thebes, in the time of Pindar,[2] whereas that city is, on the other hand, known to have been an ancient seat of the Bacchic and Orphic religion. Lastly, the doctrine of metempsychosis is ascribed to Pherecydes, and regarded as anterior to Pythagoras, not only by the writers we have quoted, but indirectly by all those who make Pherecydes the teacher of Pythagoras.[3] We have, therefore, every reason to believe that it was taught in the Orphic mysteries prior to the date of Pythagoras. According to Herodotus, the Orphics obtained it from Egypt:[4]

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[1] Hymn to Ceres, 486 sqq.

[2] Aristides, *Eleusin.* p. 421 Dind. The same is asserted of the Dionysian mysteries (to which perhaps this belief itself may originally have been peculiar) in Aristophanes, *Frogs*, 145 sqq.; Plato, *Phædo*, 69 C; *Gorgias*, 493 A; *Republic*, ii. 363 C; cf. Diog. vi. 4.

[3] Thus Plato in the *Phædo* and *Gorgias*, and, in a lesser degree, Sophocles, in the words (in Plutarch, *aud. poët.* c. 4, p. 21 F):

ὡς τρισόλβιοι
κεῖνοι βροτῶν, οἳ ταῦτα δειχθέντες τέλη
μολοῦσ' ἐς ᾍδου· τοῖσδε γὰρ μόνοις ἐκεῖ
ζῆν ἔστι, τοῖς δ' ἄλλοισι πάντ' ἐκεῖ κακά.

[4] *Thren.* Fr. 8 (114 *Bergk*): ὄλβιος, ὅστις ἰδὼν κεῖν' εἶσ' ὑπὸ χθόν'· οἶδε μὲν βίου τελευτάν, οἶδεν δὲ διόσδοτον ἀρχάν.

[5] For the words can only properly mean that he who has received the consecration regards life as a gift of God, and death as the transition to a happier state. Preller's explanation (*Demeter und Persephone*, p. 236) seems to me less natural.

[6] Ol. ii. 68 sqq. *Thren.* Fr. 4, and infra, p. 70, note 4.

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[1] The revival of dead nature in the spring was considered in the cult of Demeter as the return of souls from the under world, and harvest was looked upon as the descent of the souls thither (vide Preller, *Dem. und Pers.* 228 sqq.; *Griech. Mythologie*, i. 254, 483); and this does not apply solely to the souls of plants, to which it primarily relates, but to the souls of men. At these seasons also departed spirits appear in the upper world. It was easy to interpret these notions as implying the entrance of human souls into the visible world from the invisible, and their return into the invisible again. Cf. Plato, *Phædo*, 70 C: *παλαιὸς μὲν οὖν ἔστι τις λόγος, . . ὡς εἰσὶν [αἱ ψυχαὶ] ἐνθένδε ἀφικόμεναι ἐκεῖ καὶ πάλιν γε δεῦρο ἀφικνοῦνται καὶ γίγνονται ἐκ τῶν τεθνεώτων.*

[2] Cic. *Tusc.* i. 16, 38, and after him Lactantius, *Instit.* vii. 7, 8. Augustin *c. Acad.* iii. 37 (17), *Epist.* 137, p. 407, B. *Maur.*

[3] Suidas; Φερεκύδης; Hesychius, *De his qui erud. clar.* p. 56, Orelli; Tatian *c. Græc.* c. 3, 25, according to the obvious correction in the edition of Maurus. Cf. Porphyry, *Antr. Nymph.* c. 31. Preller also (*Rhein. Mus.* iv. 388) refers with some appearance of probability what is quoted by Origen (*c. Cels.* vi. p. 304) from Pherecydes, and Themist. *Or.* ii. 38, a, to the doctrine of Transmigration.

[4] Cf. Aristoxenus, Duris and Hermippus—so far as they have been quoted in Diog. i. 116 sqq., and viii. 1 sqq.

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[1] Maximus Tyr. xvi. 2; Diogenes, viii. 14; Porph. v.; Pyth. 19.

[2] Ap. Clemens, *Strom.* iii. 433 A, and previously ap. Cicero, *Hortens.* Fr. 85 (iv. 6, 483 *Or.*) This passage, as well as others from Plato, will be quoted at length in the section on the Pythagorean Metempsychosis, infra.

[3] *Phædo*, 62 B; *Crat.* 400 B. Cf. *Phædo*, 69 C, 70 C; *Laws*, ix. 870 D; and Lobeck, *Aglaoph.* ii. 795 sqq.

[4] Pindar's eschatology follows no fixed type (cf. Preller's *Demeter und Persephone*, p. 239), while, in many places, he adopts the usual notions about Hades, in *Thren.* 2 it is said that after the death of the body, the soul, which alone springs from the gods, remains alive; and in two places transmigration is alluded to, viz. in *Thren.* Fr. 4 (110), quoted by Plato, *Meno*, 81 B:

οἷσι δὲ Φερσεφόνα ποινὰν παλαιοῦ πένθεος
δέξεται, ἐς τὸν ὕπερθεν ἅλιον κείνων ἐνάτῳ ἔτει
ἀνδιδοῖ ψυχὰν πάλιν,
ἐκ τᾶν βασιλῆες ἀγαυοὶ καὶ σθένει χραιπνοὶ σοφίᾳ μέγιστοι
ἄνδρες αὔξοντ'· ἐς δὲ τὸν λοιπὸν χρόνον ἥρωες ἁγνοὶ πρὸς ἀνθρώπων καλεῦνται.

And Ol. ii. 68, after mention of the rewards and punishments in Hades

ὅσοι δ' ἐτόλμασαν ἐστρὶς
ἑκατέρωθι μείναντες ἀπὸ πάμπαν ἀδίκων ἔχειν
ψυχάν, ἕτειλαν Διὸς ὁδὸν παρὰ Κρόνου τύρσιν ἔνθα μακάρων
νᾶσος [νᾶσον] ὠκεανίδες αὖραι περιπνέοισιν.

Thren. Fr. 3 (109), where the wicked have the lower world, and the righteous, heaven, assigned as their dwelling-place, cannot be accepted as genuine.

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[1] A number of Orphic writings are said to have been invented by the Pythagoreans; vide Lobeck, *Aglaoph.* i. 347 sqq., and supra, p. 62, note.

[2] Cf. what will hereafter be said in the history of the Pythagorean philosophy, of the propagation of that philosophy.

[3] On which vide infra, Pythagoras and the Pythagoreans.

[4] ii. 123: *πρῶτον δὲ καὶ τοῦτον τὸν λόγον Αἰγύπτιοί εἰσι οἱ εἰπόντες, ὡς ἀνθρώπου ψυχὴ ἀθάνατός ἐστι, τοῦ σώματος δὲ καταφθίνοντος ἐς ἄλλο ζῷον αἰεὶ γινόμενον ἐσδύεται· ἐπεὰν δὲ περιέλθῃ πάντα τὰ χερσαῖα καὶ τὰ θαλάσσια καὶ πετεινά, αὖτις*

but this theory either rests upon a mere conjecture of his own, or a still more untrustworthy statement of the Egyptian priests; as historical evidence, it is of no value whatever. As to the real state of the case, history tells us nothing, and no guess that we can make even approximates to certainty. It is possible that Herodotus may be right in the main, and that the belief in transmigration was really transplanted from Egypt into Greece, either directly, or through certain intermediaries which cannot precisely be determined. But in that case, we can scarcely agree with him in supposing the Greeks to have become acquainted with it in the first beginnings of their culture, still less can we connect this acquaintanceship with the mythical personalities of Cadmus and Melampus; the most probable assumption would then be, that the doctrine had been introduced into Greece not very long before the date when we first meet with it in Greek writings—perhaps, therefore, about the seventeenth century. But it is also conceivable that this belief, the affinity of which with Hindoo and Egyptian doctrines indicates an Eastern source, may have originally immigrated from the East with the Greeks themselves, and have been at first confined to a narrow circle, becoming afterwards more important and more widely diffused. It

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ἐς ἀνθρώπου σῶμα γινόμενον ἐσδύνειν· τὴν περιήλυσιν δὲ αὐτῇ γίνεσθαι ἐν τρισχιλίοισι ἔτεσι. τούτῳ τῷ λόγῳ εἰσὶ οἳ Ἑλλήνων ἐχρήσαντο, οἱ μὲν πρότερον οἱ δὲ ὕστερον, ὡς ἰδίῳ ἑωυτῶν ἐόντι· τῶν ἐγὼ εἰδὼς τὰ οὐνόματα οὐ γράφω. Cf. c. 81: τοῖσι Ὀρφικοῖσι καλεομένοισι καὶ Βακχικοῖσι, οὖσι δὲ Αἰγυπτίοισι. Herodotus thought (according to ch. 49) that Melampus had introduced the cult of Dionysus, which he had learned from Cadmus and his followers, into Greece; but, on the other hand, in C. 53, he intimates that he considers the Orphic poems more recent than Homer and Hesiod.

might be urged, in support of this view, that similar notions have been found among races which never in any way came under Egyptian influence.[1] Nor can we altogether dispute the possibility of different nations, without any historical connection, having arrived at the same opinions concerning a future state. Even so strange a theory as transmigration seems to us may thus have been reached in several cases independently one of the other. For if the natural desire to escape death engenders a universal belief in immortality, a bolder fancy, in nations not yet capable of spiritual abstraction, might well shape this desire and belief into the hope and expectation of a return to earthly life.[2]

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[1] According to Herodotus, iv. 94 sq., the Thracian Getæ believed that the dead came to the god Zalmoxis or Gebeleïzin; and every five years they sent a messenger to this god by means of a special human sacrifice, entrusted with communications to their departed friends. That the theory of transmigration was involved in this cannot be deduced from the statement of the Greeks of the Hellespont, that Zalmoxis was a scholar of Pythagoras, who had taught the belief in immortality to the Thracians. Herodotus says that it was the custom of another Thracian tribe (Her. v. 4) to bewail the newly born, and to praise the dead as happy; because the former are about to encounter the ills of life, while the latter have escaped from them. But this custom proves even less than the other in regard to metempsychosis. The Gauls, however, are said to have believed, not only in immortality, but also in transmigration: Cæsar, *B. Gall.* vi. 14, *in primis hoc volunt persuadere (Druides) non interire animas, sed ab aliis post mortem transire ad alios.* Diodor. v. 28, sub fin.: ἐνισχύει γὰρ παρ' αὐτοῖς ὁ Πυθαγόρου λόγος, ὅτι τὰς ψυχὰς τῶν ἀνθρώπων ἀθανάτους εἶναι συμβέβηκε καὶ δι' ἐτῶν ὡρισμένων πάλιν βιοῦν, εἰς ἕτερον σῶμα τῆς ψυχῆς εἰσδυομένης. On this account many persons, adds Diodorus, place letters to their friends on the funeral pile. So Ammian. Marc. xv. 9, sub fin.

[2] If the soul is conceived as a breath-like essence which dwells in the body, and leaves it after death according to the opinion of the ancients, and especially of the Greeks, the question inevitably arises whence this essence comes, and whither it goes. For answer to this question, a child-like imagination is most easily satisfied with the simple notion that there is a place, invisible to us, in which the departed souls remain, and from which the newly born come forth. And we do, in fact, find in many

However this may be, it appears certain, that among the Greeks the doctrine of transmigration came not from the philosophers to the priests, but from the priests to the philosophers. Meantime it is a question whether its philosophic importance in antiquity was very great. It is found, indeed, with Pythagoras and his school, and Empedocles is in this respect allied with them; a higher life after death is also spoken of by Heracleitus. But none of these philosophers brought the doctrine into such a connection with their scientific theories as to make it an essential constituent of their philosophic system: it stands with them all for a self-dependent dogma side by side with their scientific theory, in which no lacuna would be discoverable if it were removed. A philosophic basis was first given to the belief in immortality by Plato; and it would be hard to maintain that he would not have arrived at it without the assistance of the myths which he employed for its exposition.

From all that has now been said, it would appear that Greek Philosophy in regard to its origin was no more indebted to the religion of the mysteries than to the public religion. The views of nature which were contained in the mysteries may have given an impulse to thought; the idea that all men need religious consecration and purification may have led to deeper study of the moral nature and character of man; but as

different nations, not merely the belief in a kingdom of the dead, but the idea that souls return to the body from the lower regions of the earth or from heaven. From this there is but a step to the theory that the same souls which previously inhabited a body should afterwards enter another body.

scientific instruction was not originally contemplated in the tales and practices of the mystic cult, any philosophic exposition of these presupposed that the expositor had already attained the philosophic standpoint; and as the mysteries were after all only made up of general perceptions and experiences accessible to everyone, a hundred other things could really perform for Philosophy the same service that they did. Philosophy did not require the myth of Kore and Demeter to reveal the alternation of natural conditions, the passage from death to life and from life to death; daily observation sufficed for the acquisition of this knowledge. The necessity of moral purity, and the advantages of piety and virtue, needed not to be proclaimed by the glowing descriptions of the priests concerning the happiness of the initiated and the misery of the profane. These conceptions were immediately contained in the moral consciousness of the Greeks. Nevertheless, the mysteries were by no means without importance in regard to Philosophy, as the results of our enquiry have shown. But their importance is not so great, nor their influence so direct, as has often been imagined.

§ III.—*The Native Sources of Greek Philosophy continued.*

MORAL LIFE, CIVIL AND POLITICAL CONDITIONS.

The ideality of the Greek religion finds its counterpart in the freedom and beauty of Greek life; it is impossible to regard either of these characteristics, strictly speaking, as the ground or consequence of the other; they grew up side by side, mutually requiring and sustaining one another, out of the same natural temperament and under the same favourable conditions. As the Greek reverenced in his gods the natural and moral order of the world, without therefore renouncing in regard to them his own value and freedom, so Greek morality stands in a happy mean between the lawless license of barbarous and semi-barbarous races and the slavish obedience which subjects the peoples of the East to the will of another and to a temporal and spiritual despotism. A strong feeling of liberty, and at the same time a rare susceptibility to measure, form, and order; a lively sense of community in existence and action; a social impulse which made it an absolute necessity for the individual to ally himself to others, to subordinate himself to the common will, to follow the tradition of his family and his country—these qualities, so essential in the Hellenes, produced in the limited area of the Greek states a full, free and harmonious life, such as no other nation of antiquity can exhibit. The very narrowness of the sphere in which their moral perceptions moved was in itself favourable to this result. As the individual knew that he was free and had a right to protection only as being a citizen of this or that state, and as, in the same way, his relation to others was determined by their relation to the state to which he belonged, every one from the beginning had his problem clearly marked out for him. The maintaining and extension of his civil importance, the fulfilment of his civil duties, work for the freedom and greatness of his people, obedience to the laws,—

these constituted the simple end which the Greek definitely proposed to himself, and in the pursuit of which he was all the less disturbed because his glances and endeavours seldom strayed beyond the limits of his home, because he excluded the idea of seeking the rule of his actions elsewhere than in the laws and customs of his state, because he dispensed with all the reflections by which the man of modern times labours to reconcile, on the one side, his individual interests and natural rights with the interest and laws of the commonwealth, and, on the other, his patriotism with the claims of a cosmopolitan morality and religion. We cannot, indeed, regard this narrow conception of moral problems as the highest possible conception, nor can we conceal from ourselves how closely the dismemberment of Greece, the consuming disquiet of its civil wars and party struggles, not to speak of slavery and the neglect of female education, were connected with this narrowness; but our eyes must not therefore be closed to the fact that on this soil and from these presuppositions a freedom and culture arose which give to the Greeks their unique place in history. It is easy also to see how deeply and essentially Philosophy was rooted in the freedom and order of the Greek state. There was not, indeed, any immediate connection between them. Philosophy in Greece was always the private concern of individuals, states only troubled themselves about it in so far as they interfered with all doctrines morally and politically dangerous; it received no positive encouragement or support from cities and princes until a late period, when it had long passed beyond the highest point of its development. Nor was public education concerned with philosophy, or science of any kind. At Athens, even in the time of Pericles, it scarcely included the first rudiments of what we should call scientific culture; nothing was attempted beyond reading, writing, and a certain amount of arithmetic: history, mathematics, physics, the study of foreign languages, and so forth, were altogether ignored. The philosophers themselves, and especially the Sophists, were the first to induce certain individuals to seek for wider instruction, which, however, was even then restricted almost exclusively to rhetoric. Besides the above-mentioned elementary arts, ordinary education consisted entirely of music and gymnastics; and music was primarily concerned, not so much with intellectual training as with proficiency in the Homeric and Hesiodic poems, and the popular songs, singing, playing on stringed instruments, and dancing. But this education formed complete and vigorous men, and the subsequent discipline of public life engendered such self-confidence, demanded such an exercise of all the powers, such acute observation and intelligent judgment of persons and circumstances, above all, such energy and worldly prudence, as must necessarily have borne important fruit to science whenever the scientific need arose. That it could not fail to arise was certain; for in the harmonious many-sidedness of the Greek character, the development of moral and political reflection called forth a corresponding and natural development of speculative thought; and not a few of the Greek cities had attained, by means of civil liberty, a degree of prosperity which ensured leisure for scientific activity to some at least of their citizens. Although, therefore, in ancient times, the political life and education of the Greeks had no direct concern with Philosophy; and although, on the other hand, the earliest Philosophy, as a rule, neglected ethical and political questions, yet the training of men and the fact that circumstances took the form required for the production of Philosophy were important elements in its history. Freedom and severity of thought were the natural fruits of a free and law-directed life; and the sound and sterling characters which grew up on the classic soil of Greece could not fail, even in science, to adopt their standpoint with decision, and to maintain it clearly and definitely, with full and unwavering purpose.[1]

Lastly, it was one of the chief excellences of Greek education that it did not split up human nature, but, by the even development of all the powers of man, sought to make of him a beautiful whole, a moral work of art. This trait we may venture to connect with the fact that Greek science, especially in its commencement, chose the path that is indeed generally taken by thought in its infancy—the path downward from above; that it did not form a theory of the whole from the aggregation of individuals, but sought to gain a standard for the individual from the study of the whole, and at once to shape a collective representation from the existing fragments of cosmical knowledge; that philosophy in Greece preceded the particular sciences.

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[1] This intimate connection of politics with philosophy is strikingly shown by the fact that many of the ancient philosophers were distinguished as statesmen, legislators, political reformers and generals. The political activity of Thales and of the Pythagoreans is well known. We are told that Parmenides gave laws to his native city, and that Zeno perished in his attempt to free his countrymen. Empedocles restored democracy in Agrigentum; Archytas was no less great as a general than as a statesman; and Melissus is probably the same person who vanquished the Athenian fleet.

If we examine somewhat more closely the circumstances which conditioned the progress of Greek culture before the appearance of philosophy, two phenomena especially claim our attention: these are the republican form of the government, and the spread of the Greek races by colonisation. The centuries which immediately preceded the earliest Greek Philosophy, and those which partly coincided with it, are the times of the legislators and of the tyrants, of the transition to those constitutional forms of government on the soil of which Greek political life attained its highest perfection. When the patriarchal monarchy of the Homeric period, in consequence of the Trojan war and the Doric migration, and through the extinction, disqualification or banishment of the ancient royal houses, had entirely given place to oligarchy, the aristocracy became the means of spreading freedom and higher culture throughout the smaller circle of the ruling families. Afterwards when the oppressions and internal deterioration of these families had evoked the resistance of the masses, the popular leaders came mostly from the ranks of their hitherto masters, and these demagogues almost everywhere eventually became tyrants. But as the government by a single person, because of its very origin, found its chief adversary in the aristocracy, and, as a counterpoise, was forced to fall back for support upon the people, it became itself a means of training and educating the people to freedom. The courts of the tyrants were centres of art and culture;[1] and when their rule was overthrown, which generally happened in the course of one or two generations, their inheritance of power did not revert to the earlier aristocracy, but to moderate constitutions founded on fixed laws. This course of things was as favourable to the scientific as to the political training of the Greeks. In the efforts and struggles of this political movement, all the powers which public life brought to science must have been aroused and employed, and the feeling of youthful liberty imparted to the spirit of the Greek people a stimulus which must needs have affected their speculative activity. Thus the laying of the foundations of the scientific and artistic glory of Greece was eagerly carried on side by side with the transformation of her political circumstances; a connection of phenomena which is very striking, and which shows that among the Greeks, as among all healthy nations, culture has been the fruit of liberty.

This general revolution was effected more quickly in the colonies than in the mother country; and the existence of these colonies was of the highest importance in regard to it. During the 500 years which elapsed between the Doric conquests and the rise of Greek Philosophy, the Greek races had spread themselves, by means of organised emigration, on all sides. The islands of the Archipelago, as far as Crete and Rhodes; the western and northern coasts of Asia Minor; the shores of the Black Sea, and the Propontis; the coasts of Thrace, Macedonia and Illyria; of Magna Græcia and Sicily, were covered with hundreds of settlements; Greek colonists had penetrated even to distant Gaul, to Cyrene, and to Egypt. Most of these settlements attained to prosperity, culture, and free constitutions, sooner than the states from which they emanated. Not only did the very disruption from their native soil produce a freer movement, and a different organisation of civil society, but their whole situation was much more convenient for trade and commerce, for enterprising activity, and for all kinds of intercourse with strangers than was the case with the cities of Greece proper; it was therefore natural that in many respects they should outstrip the older states. How greatly they did so, and how important the rapid growth of the colonies was in regard to the development of Greek Philosophy, is best seen from the fact that all the Greek philosophers of note before Socrates, one or two Sophists only excepted, belonged either to the Ionian and Thracian colonies, or to those in Italy and Sicily. Here at the limits of the Hellenic world were the chief settlements of a higher culture, and as the immortal poems of Homer were a gift from the Greeks of Asia Minor to their native country, so also Philosophy came from the east and west to the centre of Greek life; there to attain its highest perfection, favoured by a happy combination of all forces, and a coincidence of all necessary conditions, at an epoch when, for most of the colonies, the brightest period of their history had passed away beyond recall.

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[1] For example, those of Periander, Polycrates, Pisistratus, and his sons. But, excepting the story of Periander's relation to the seven wise men, there is no tradition of the philosophers being connected with tyrants before the appearance of the Sophists.

How thought gradually developed itself under these circumstances up to the point at which the earliest scientific endeavours, in the strict sense of the word, were made, we learn to some extent from the still existing records of early cosmology and ethics, though our information from these sources is far from being complete.

§ IV.—*Native Sources of Greek Philosophy continued.*

COSMOLOGY.

In a people so richly endowed as the Greeks, and so eminently favoured by circumstances in regard to their intellectual development, reflection must soon have been awakened, and attention directed to the phenomena of nature and of human life; and attempts must early have been made, not merely to explain the external world in reference to its origin and causes, but also to consider the activities and conditions of mankind from more general points of view. This reflection was not, indeed, at first of a specifically scientific kind, for it was not as yet regulated by the thought of any general interdependence of things according to fixed law. Cosmology, until the time of Thales, and, so far as it allied itself with religion, even longer, retained the form of a mythological narrative; Ethics, until the time of Socrates and Plato, that of aphoristic reflection. The fortuitous, and sometimes even miraculous, interference of imaginary beings took the place of the interdependence of nature; instead of one central theory of human life, we find a number of moral sayings and prudential maxims, which, abstracted from various experiences, not unfrequently contradicted one another, and, at the best, were reduced to no general principles and brought into no scientific connection with any theory of human nature. Though it would be a mistake to overlook this distinction, and to place either the mythic cosmologists or the gnomic poets in the number of the philosophers,[1] as has been done by some writers, both ancient and modern, yet we ought not, on the other hand, to underrate the importance of these early attempts, for they were at least useful in calling attention to the questions which science had first to consider, and in accustoming thought to combine particular phenomena under general points of view; and thus a good deal was done towards a beginning of science.

The most ancient record of mythic cosmology among the Greeks is the Theogony of Hesiod. How much of this work is derived from still more ancient tradition, and how much is invented by the poet himself and his later revisers, cannot now be discovered with certainty, nor is this the place to enquire. It is enough for our purpose to observe that the Theogony, with the exception of a few subsequent interpolations, was undoubtedly known to the earliest philosophers in its present form.[1] We find in it nothing approaching to a scientific apprehension or solution of the cosmological problem. The poet proposes to himself the question from which all cosmogonies and histories of creation start, and which, indeed, obviously suggests itself even to the most undisciplined intellect,—the question as to the origin and causes of all things. But in the Theogony this question has not the scientific importance of an enquiry into the essence and reasons of phenomena. With childlike curiosity the poet asks: Who made all things? and how did He make them? and the answer simply consists in positing as the first being something that cannot be explained away by thought, and making the rest originate from this by means of some analogy drawn from experience. Now experience points out two kinds of origin. All that we see either forms itself naturally, or else is made with a design by definite individuals. In the former case production takes place by the action of the elements, by growth, or by generation; in the latter, either mechanically by the elaboration of some given material, or dynamically, as we work upon other men by the mere expression of our will. All these analogies are applied, in the cosmogonies of different nations, to the origin of the world and of the gods; as a rule, several of them at once, according to the nature of the object in question. To the Greeks the analogy of generation must have been the most obvious, because, in accordance with the particular bent of their imagination, they had personified the various parts of the world as beings akin to humanity, whose origin could be represented in no other way. In any case they must have kept to an analogy drawn from nature, for Greek thought was too naturalistic and polytheistic to maintain, like the Zoroastrian and Judaic religions, that everything had been called into existence by the mere fiat of a creator. In Greek mythology the gods themselves were created, and the deities worshipped by the people belong altogether to a younger race of gods; there is, therefore, no divinity who can be regarded as the first cause of all things, without beginning, and who possesses absolute power over nature. So in Hesiod it is the genesis of the gods on which his whole cosmogony turns. Most of these genealogies, and the myths connected with them, are nothing more than the expression of simple perceptions, or picture-thoughts, of the kind that imagination everywhere produces when the knowledge of nature is in its infancy. Erebus and Nyx are the parents of Æther and Hemera, for day in its brightness is the son of night and darkness. The earth brings forth the sea of herself alone, and rivers in her union with the sky; for the sources of streams are fed by the rain, while the ocean appears to be a mass of water which has been from the beginning in the depths of the earth. Uranus is emasculated by Cronos, for the sun-heat of harvest time puts an end to the fertilising showers of the sky. Aphrodite springs from the seed of Uranus, for the rain in spring awakens the generative impulse of nature. The Cyclopes, Hecatonchires and giants, the Echidna and Typhœus are children of Gæa; other monsters are the progeny of night or of the waters, partly because of their originally physical import, partly because what is monstrous cannot spring from the bright heavenly gods, but only from darkness and the unfathomable deep. The sons of Gæa, the Titans, were overthrown by the Olympians; for as the light of heaven subdues the mists of earth, so the all-ordering Deity has bound the wild forces of nature. The thought contained in these myths is very limited; whatever in them transcends the most obvious perceptions is the result, not of reflection concerning the natural causes of things, but of an activity of fancy from which, even when it produces something really significant, we must be careful not to expect too much. Even in the combination of these myths, which is principally, no doubt, the work of the poet, we fail to discover any leading thought of deeper import.[1] The passage in the Theogony which sounds most like a philosophic conception of nature, and was almost the only passage employed by the ancient philosophers in that sense,[1] is the commencement of the poem (v. 116 sqq.). Chaos was the first to exist, then came Earth (with the abyss, or Tartarus) and Eros. Of Chaos were born Erebus and Night; Earth first brought forth of herself the sky, the mountains, and the sea; then in marriage with the sky she produced the progenitors of the different families of gods, except the few that are derived from Erebus and Night. This representation certainly attempts to get at some notion of the world's origin, and we may so far consider it as the beginning of cosmology among the Greeks; but as a whole it is very crude and imperfect. The poet asks himself what was really the first of all things, and he finally abides by the Earth as the immovable basis of the Cosmos. Outside the Earth was nothing but gloomy night, for the luminaries of heaven were not as yet in existence. Erebus and Night are therefore as old as the Earth. In order that another should be produced from this first one, the generative impulse or Eros must have existed from the beginning. Such then are the causes of all things. If we exclude all these beings from our thought, there remains for the imagination only the idea of infinite space, which at this stage of culture it does not conceive in an abstract manner as empty mathematical space, but concretely as an immeasurable, waste and

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[1] As was certainly done in the most flourishing period of Greek Philosophy by the Sophists and by the adherents of systems of natural Philosophy. Plato is evidence of the former in *Prot.* 316 D, cf. *ibid.* 338 E sqq.; and of the latter there is mention in *Crat.* 402 B; and also in Aristotle, *Metaph.* i. 3,983 b, 27 (cf. Schwegler on this passage). The Stoics afterwards were especially addicted to representing the ancient poets as the earliest philosophers, by the allegorical interpretation of their writings; and in the Neo-Platonists this practice passed all bounds. Tiedemann was the first to declare Thales the starting-point of Philosophy, vide his *Geist der speculativen Philosophie*, i. Preface, p. xviii.

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[1] Cf. Petersen (*Ursprung und Alter der Hesiod: Theog.* (*Progr. der Hamburgischen Gymn.*), 1862), who seems to me to have proved at any rate this much, whatever we may think of his other theories. The polemic of Xenophanes and Heracleitus against Hesiod (which we shall hereafter consider) and the remarkable utterance of Herodotus, ii. 53, are decided evidence against the supposition that the Theogony is no older than the sixth century; the general character of its conceptions and language, however, attest this even more strongly.

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[1] Brandis (*Geschichte der Griech-Röm. Phil.* i. 75) finds not merely in the beginning of the Theogony, but also in the myths of the dethronement of Uranus, and the conflict of the sons of Cronos with their father and the Titans, the doctrine that the determinate proceeds from the indeterminate, and that there is a gradual evolution of the higher principle. But these thoughts are much too abstract to admit of our seeking in them the motive of the mythopœic fancy. The poet does not seem to have been influenced by any speculative idea even in the arrangement of these myths; the three generations of the gods merely form the thread on which he strings his

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genealogies, and by which he connects them together externally.

[1] Proof of this will be found in the edition of Hesiod of Gaisford-Reiz, verse 116.

formless mass. The first of all things, therefore, in reality is Chaos. In some such way as this perhaps the foregoing theory of the beginning of the world may have arisen in the mind of its author.[1] It is founded, indeed, upon a desire for enquiry, an endeavour to attain clear and coherent notions, but the interest which rules it is that of the imagination rather than that of thought. No question is asked concerning the essence and general causes of things, the problem is merely how to learn something about the actual facts relating to the primitive condition of the world and to its ulterior developments; and in the solution of this problem, we naturally find that the poet is guided by the intuitions of his imagination, and not by intelligent reflection. The commencement of the Theogony is, considering its date, a thoughtful and pregnant myth, but it is not as yet a philosophy.

The next writer after Hesiod of whose cosmology we know anything at all definite is Pherecydes of Syros,[2] a contemporary of Anaximander;[1] in later story a miraculous person like Pythagoras.[2] In a work, the title of which is variously given, he says that there existed before all things, and from eternity, Zeus, Chronos, and Chthon.[3] By Chthon he seems to have understood the

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[1] Whether this author or some older poet was the composer of the Theogony is, as has already been observed, of little importance. Brandis (*Gesch. der Gr.-Röm. Phil.* i. 74) supports the latter theory. It is unlikely, he says, that the poet, had he invented the myth of Tartarus as one of the first principles of the world, or of Eros as the creative principle, would have made no further use of them in his Cosmology. But not to speak of the doubtful origin of the 119th verse, which mentions Tartarus, but which is wanting in Plato (*Symp.* 178 B), and Aristotle (*Metaph.* i. 4, 984 b, 27), I should rather explain this circumstance as showing that the myths subsequently introduced belonged to the older tradition, and the opening verses to the author of the Theogony itself.

[2] For his life, age, and writings, cf. Sturz, *Pherecydis Fragmenta*, p. 1 sqq. Preller in the *Rhein. Mus.* iv. (1846) 377 sqq. *Allgem. Encyclop.* of Ersch and Gruber, iii. 22, 240 sqq. Art. *Pherecydes*, Zimmermann in Fichte's *Zeitschrift für Philosophie*, &c. xxiv. B, 2 H. S. 161 sqq. (reprinted in Zimmermann's *Studien.* Vienna, 1870, p. 1 sqq.). This last, however, credits the old mythographer with much that is

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alien to him. Conrad, *De Pherecydis Syrii ætate atque cosmologia.* Coblenz, 1857.

[1] He is described as such by Diogenes, i. 121, and Eusebius, *Chron.* 60 Ol. The former, probably following Apollodorus, places his most flourishing period in the 59th Olympiad (540 B.C.), and the latter in the 60th Olympiad. Suidas (Φερεκ.) in a very obscure passage fixes his birth in Ol. 45 (600–596 B.C.). His age is given by the Pseudo-Lucian (*Macrob.* 22, a passage where he certainly seems to be meant) as 85. Neither of these statements, however, is altogether trustworthy, though perhaps neither is far from the truth; and there are besides other reasons against our drawing any such definite conclusion as Conrad, who thus sums up (p. 14) his careful discussion of this question: Pherecydes was born in the 45th Olympiad or shortly before, and died, '*octogenarius fere*,' towards the end of the 62nd Olympiad. (Between Ol. 45, 1, to 62, 4, moreover, there are only 71–72 years.) Nor does the assertion that Pythagoras tended him in his last illness help us at all, partly because it is itself very untrustworthy, and partly because this occurrence is placed by some before Pythagoras' emigration to Italy, and by others in the last period of his life. Cf. Porph. *Vita Pythag.* 455 sq.; Iamb. *Vita Pythag.* 184, 252; Diog. viii. 40.

[2] Cf. the anecdotes in Diog. i. 116 sq.

[3] The commencement of this work, in Diog. i. 119 (cf. Damascius, *De Princ.* p. 384; and Conrad, p. 17, 21) was as follows: *Ζεὺς μὲν καὶ Χρόνος ἐς ἀεὶ καὶ Χθὼν ἦν. Χθονίῃ δὲ ὄνομα ἐγένετο Γῆ, ἐπειδὴ αὐτῇ Ζεὺς γέρας διδοῖ.* By *γέρας* we cannot, with Tiedemann (*Griechenlands erste Philosophen*, 172), Sturz (*loc. cit.* p. 45) and others, understand motion; nor with Brandis the original qualitative determination, for this latter is far too abstract a conception for Pherecydes, and he can hardly have regarded the earth as moved. Neither interpretation, in fact, can be got out of the word; what it means is: Since Zeus conferred honour upon her. We may either understand by this honour, what always seems to me the most probable, the adornment of her surface, mentioned immediately after (the garment with which Zeus covered the earth); or else, with Conrad, p. 32, the honour of her union with Zeus, by which the Earth became the mother of many gods (p. 74, 2). Pherecydes means to derive the name *γῆ* from *γέρας*. This circumstance of itself forbids the substitution of *πέρας* for *γέρας*, proposed by Rose, *De Arist. libr. ord.* 74; but the sense we should get by this change is, in my opinion, very unsatisfactory.

earth; by Chronos, or Cronos,[1] that part of heaven nearest the earth, and the deity ruling it;[2] by Zeus, the highest god, disposing and forming the whole universe, and himself at the same time the highest heaven.[3]

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[1] So he is called by Hermias (*Irrisio*, c. 12), who expressly says that Κρόνος is the same as Χρόνος. In Damascius, on the contrary, where Conrad, p. 21, also reads Κρόνον, I find in the manuscripts no other reading than Χρόνον.

[2] By the Cronos of Pherecydes is generally understood Time—so Hermias *loc. cit.* and Probus on Virgil's *Eclogues*, vi. 31. Pherecydes himself indicates this signification when he puts Χρόνος instead of Κρόνος. Yet it is scarcely credible that so ancient a thinker should have placed the abstract conception of Time among the primitive causes; and Cronos, in fact, appears as a much more concrete nature when it is told of him (vide *infra*) that he created from his seed fire, wind and water, and that he was the leader of the gods in the conflict with Ophioneus. That this only means that *in course of time* fire, wind and water arose, and that *in course of time* Ophioneus was conquered, I cannot believe. If the gods at strife with Ophioneus represent certain powers of nature, Cronos, their leader, must be something more real than merely Time; and if fire, wind and water were formed from the seed of Chronos, this seed must be conceived as a material substance, and Chronos must consequently represent a certain part, or certain constituents, of the world. If we consider that fire, wind and water are formed in the atmosphere during tempests, and that the fertilising rain is represented in the mythus of Uranus as the seed of the god of heaven; that Chronos, according to this original import, was not the god of Time *in abstracto*, but the god of the warm season, of the time of harvest, of the sun-heat (Preller, *Griech. Mythol.* i. 42 sq.), and, as such, was a god of heaven—that he was so regarded by the Pythagoreans when they identified the vault of heaven with Χρόνος, and called the sea the tears of Chronos (vide *infra*, Pythagorean system)—if we consider all this, the opinion given above, concerning which even Conrad's (p. 22) and Brandis's adverse judgment (*Gesch. der Entw. der Griech. Phil.* i. 59) have not shaken me, will appear to have far the most probability in its favour.

[3] To Zeus, as the divine creator of the universe, the passage in Aristotle's *Metaphysics*, xiv. 4, 1091 b, 8, refers: οἵ γε μεμιγμένοι αὐτῶν (scil. τῶν ἀρχαίων ποιητῶν) καὶ τῷ μὴ μυθικῶς ἅπαντα λέγειν, οἷον Φερεκύδης καὶ ἕτεροί τινες, τὸ γεννῆσαν πρῶτον ἄριστον τιθέασι. As the notion of Zeus as god of heaven is based upon the idea of the sky itself, and as the gods of Pherecydes generally represent at the same time certain parts of the world, we may assume that he did not discriminate the world-creating power, which he calls Zeus, from the upper portion of the sky. The assertion of Hermias and Probas (*loc. cit.*) that by Zeus he understood Æther, and of Probus (*loc. cit.*) that he understood fire, show

Chronos produces from his seed fire, wind and water; the three primal beings then beget numerous other gods in five families.[1] When Zeus, in order that he might fashion the world,[2] had changed himself into Eros (who, according to the ancient theory, must be the world-

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that we are here concerned with an interpretation of the Stoics, and not with an original and authentic text. That Hermias should reduce Æther and Earth to the ποιοῦν and πάσχον is also entirely in harmony with the Stoic point of view. Cf. Zeller, *Phil. der Gr.* Part III. a, 119, second edition.

[1] Damascius, *loc. cit.*: τὸν δὲ Χρόνον ποιῆσαι ἐκ τοῦ γόνου ἑαυτοῦ πῦρ καὶ πνεῦμα καὶ ὕδωρ, . . . ἐξ ὧν ἐν πέντε μυχοῖς διῃρημένων πολλὴν γενεὰν συστῆναι θεῶν, τὴν πεντέμυχον καλουμένην. To the same μυχοί (as Brandis thinks, p. 81) the statement of Porphyry perhaps refers (*De antro nymph.* c. 31), according to which Pherecydes mentions μυχοὺς καὶ βόθρους καὶ ἄντρα καὶ θύρας καὶ πύλας; though Porphyry himself sees in them the γενέσεις καὶ ἀπογενέσεις ψυχῶν. Preller (*Rh. Mus.* 382, *Encycl.* 243) thinks that Pherecydes here intends to speak of five admixtures, in various proportions, of the elementary substances (Æther, Fire, Air, Water, Earth), in each of which one of these elementary substances predominates. It seems to me, however, very hazardous to ascribe to the ancient philosopher of Syra a theory of the Elements in the sense of Empedocles or Aristotle (a theory which presupposes a far more developed stage of philosophic reflection), or to believe that he anticipated Philolaus in fixing the number of these elements at five. Conrad's modification also of this interpretation, by which the five μυχοὶ are made to signify the five layers, circumfolding each other, of earth, water, air, fire and æther (*loc. cit.* p. 35), attributes to Pherecydes, as it appears to me, a view of the world that is too scientific and too similar to Aristotle's; the theory, especially, of a fiery sphere invisible to us, and the precise discrimination of æther from fire and air, is, according to all other traces of it, much later. It would be more reasonable to suppose that Pherecydes distinguished Olympic gods, fire-gods, wind-gods, water-gods and earth-gods. Suidas says that the work of Pherecydes was named ἑπτάμυχος, from the μυχοί. Preller (*Rh. Mus.* 378) conjectures instead πεντέμυχος. Conrad (p. 35) adds to the above-mentioned five μυχοὶ the two divisions of the lower world, Hades and Tartarus. It is supposed (though this is not quite clear from Origen, *C. Cels.* vi. 42) that Pherecydes himself distinguished Hades and Tartarus. Nothing certain, however, can be made out on the subject. Plato, in *Soph.* 242 C: ὁ μὲν (μῦθον διηγεῖται) ὡς τρία τὰ ὄντα, πολεμεῖ δὲ ἀλλήλοις ἐνίοτε αὐτῶν ἄττα πῃ, τοτὲ δὲ καὶ φίλα γιγνόμενα γάμους τε καὶ τόκους καὶ τροφὰς τῶν ἐκγόνων παρεχεται, doubtless refers to the exposition we have been considering.

[2] Proclus in *Tim.* 156 A.

forming force), he made, we are told, a great robe, on which he embroidered the earth and Ogenos (Oceanos), and the chambers of Ogenos; he spread this robe over an oak upborne by wings[1] (ὑπόπτερος), that is, he clothed the framework of earth floating in space[2] with the varied surface of land and ocean.[3] Ophioneus, with

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[2] The wings in this case denote only free suspension, not swift motion.

[3] Conrad opposes the above explanation on two accounts. First he agrees (p. 40) with Sturz (p. 51), that the winged oak is not merely the framework of the earth, but of the whole universe, and that the woof spread over the oak is the sky. Against this, I can only repeat what I have already, in the second edition of this work, replied to Sturz, that the tissue on which land and sea are embroidered (this alone can be meant by the words *ἐν αὐτῷ ποικίλλει*; and Clemens also calls the *φᾶρος* itself *πεποικιλμένον*) cannot signify the sky. It would be easier to understand it as 'the visible things that encompass the world'—therefore the surface of the earth and sky (cf. Preller, *Rh. Mus.* 387, *Encyklo.* 244); but since earth and ocean are mentioned as the only objects embroidered on the woof, we have no ground for thinking of anything besides the terrestrial surface. Secondly, Conrad (p. 24 sqq.) supposes that by *Χθὼν* Pherecydes intends Chaos, the primitive matter, which contains all matters, except æther, in itself. Out of this, through the working of Zeus or Æther, the elemental matters earth, water, air, and fire were made; and the earth itself when separated from the primitive matter was called *Χθονίη*, as distinguished from *Χθών*. But the words quoted from Diog. p. 72, 3, already exclude such a theory; for who would infer from the mere interchange between *Χθὼν* and *Χθονίη* that in the one case we are concerned with the mixture of all substances, and in the other with the earth which resulted from this mixture? Damascius, whom we have no right to charge with error in this matter, expressly mentions *Ζεὺς*, *Χρόνος* and *Χθονία* as the three first principles of Pherecydes (*De princ.* c. 124, p. 384). Again, when Pherecydes, according to Damascius, says that fire, air and water were made by Chronos *ἐκ τοῦ γόνου ἑαυτοῦ*, how can it be maintained that Zeus separated them out of *Χθών*? Conrad, lastly, urges that his theory best explains the statement (vide Achilles Tatius in *Phænom.* c. 3, 123 E; *Schol. in Hesiodi Theog.* 116; Tzetz. in *Lycophron*, 145) that Pherecydes, like Thales, made water his first principle; but this does not help him much. For that statement rests upon suspicious testimony, and is besides entirely

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erroneous on the chief point, and Conrad himself acknowledges (p.26) that in the chaotic primal matter which he thinks is denoted by the name of Χθὼν, Earth must have preponderated, to occasion the choice of this name. If there is any error, the cause of it may lie elsewhere, either in the doctrine of Pherecydes himself, or in a misapprehended account of the doctrine. Even an antithetical comparison of Pherecydes and Thales, like that in Sextus, *Pyrrh.* iii. 30, *Math.* ix. 360 (Pherecydes made earth, and Thales water, the principle of all things), might, by the careless hand of a copyist or compiler, be turned into a parallel between them; or someone who found Pherecydes classed with Thales, as one of the oldest philosophers, may have ascribed to him Thales' doctrine. Perhaps even what Pherecydes said of Oceanus, or his statement about the seed of Cronos, or some other definition that has not come down to us, may have been explained in this way. Whether Pherecydes thought that the sea oozed out of the earth conceived as moist in its primeval condition, or was filled by water from the atmosphere (the water arising from the γονὴ of Cronos), is not clear from our documents; for it is certainly possible that the production of water by Cronos may not apply to the water of the sea.

[1] Celsus ap. Origen *c. Cels.* vi. 42; Max. Tyr. x. 4; Philo of Byblus ap. *Eus. præp. Ev.* i. 10, 33 (the latter represents Pherecydes as having borrowed this trait from the Phœnicians); Tertullian, *De cor. mil.* c. 7.

[2] Preller (*Rh. Mus.* 386) seeks to establish the contrary, and I followed him in my second edition. But though we find traces, with Apollonius and others (v. *infra*), of a theogony in which Ophion, Kronos and Zeus follow one another as rulers of the universe, we have no right to refer this representation to Pherecydes himself. With him Ophioneus fights indeed for the possession of heaven, but that he had it to begin with is not stated, and it is irreconcilable with the assertion that Zeus had been there from eternity, and still more with the utterance of Aristotle (*supr.* p. 93); for he adduces as a peculiarity of Pherecydes that in contradistinction to the older Theogonies he had declared the first principle to be the most perfect, as they are blamed because *βασιλεύειν καὶ ἄρχειν φασὶν οὐ τοὺς πρώτους, οἷον νύκτα, κ.τ.λ., ἀλλὰ τὸν Δία*, and did not therefore regard the world-ruling power or Zeus as the *πρῶτον*. Pherecydes must himself have so regarded him. This, as Conrad rightly observes, also excludes the theory that Zeus first became lord of heaven and king of the gods by the overthrow of Cronos.

essential result to be gathered from scattered fragments and traditions respecting the doctrine of Pherecydes. If we compare it with the Hesiodic cosmogony, it undoubtedly evinces progress of thought. We find, even thus early, a definite attempt to discriminate, on the one hand, between the material constituents of the universe — the earth, and the atmospheric elements; and, on the other, between matter and plastic force. In what is said of the conflict of Chronos with Ophioneus, we seem to discern the thought that in the attainment of the present cosmical order the forces of the abyss were limited by the influence of the higher elements.[1] But the expression of all this is mythical, and in accordance with the older cosmological mythology. The world is not formed by the natural operation of original matter and forces; it is wrought by Zeus with the mysterious power of a god; the reduction of phenomena to natural causes, which is the first real commencement of Philosophy, is not here to be found. It would therefore be of little importance to the history of Philosophy to know that Pherecydes took certain details of his theory, such as the personality of Ophioneus, from Phœnician or Egyptian mythology; but whether important or not, the statement cannot be adequately proved by the testimony of so untrustworthy a writer as Philo of Byblus;[2] and the distinction between the destroying serpent god of Pherecydes and the serpent-shaped Agathodæmon is so apparent, that we might as well identify the former with the serpent form of Ahriman, or even, like Origen (*loc. cit.*), with the serpent of the Mosaic paradise, if so obvious, and among the Greeks so common, a symbol required a foreign derivation to account for it. The impossibility of referring the whole cosmogony of Pherecydes, in its essential features,[1] to the Egyptians, will at once appear on an intelligent comparison of his presentations with the Egyptian myths.[2] The assertions of certain later and untrustworthy writers[3] as to his Oriental teachers are of little importance as evidence.[4]

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[1] The serpent is a chthonic animal, probably signifying Ophioneus. Vide Preller, *Rhein. Mus. loc. cit.*, and *Allg, Encyclo.* p. 244.

[2] In Euseb. *loc. cit.*

If our knowledge is imperfect in regard to Pherecydes, it is still more so in respect to some others, who contemporaneously, or nearly contemporaneously, with him set up various cosmological theories. Of Epimenides, the well-known hierophant of Solon's time,[5] we are told by Damascius that,[1] according to Eudemus, he admitted two first causes,—the Air and Night;[2] and proceeding from these a third, Tartarus. From them sprang two other beings, not precisely designated, whose union produced the egg of the universe; a denotation of the celestial sphere which is found in several cosmogonies, and which very naturally resulted from the representation of the world's origin as analogous to the development of animal life. Whether this notion was transplanted from Western Asia to Greece, whether it was arrived at independently by Greek mythology, or whether, lastly, it had been preserved in ancient tradition from the earliest sources of the Greek race,—are questions we must leave unanswered. From this egg other existences were produced. The thought contained in this cosmogony, as far as our meagre information enables us to criticise it, is unimportant, whether we consider Epimenides himself to have made the alteration in the Hesiodic representation, or, in doing so, to have followed the example of some more ancient predecessor. The same holds good of Acusilaos,[3] who was much more closely allied to Hesiod, for he represents Chaos as bringing forth a male and a female being—Erebus and Night; Æther, Eros,[4] Metis, and

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[1] Zimmermann, *loc. cit.*

[2] Another doctrine attributed to Pherecydes, and which equally must have come from the East, the dogma of Transmigration, has already been discussed, p. 68 sq.

[3] Josephus, *Contr. Apion.* 1, 2, end, reckons him as belonging to the Egyptian and Chaldæan schools. Cedren., *Synops.* i. 94 B, represents him as travelling into Egypt. Suidas (Φερεκ.) says he used the secret writings of the Phœnicians; the Gnostic Isidorus in Clemens, *Strom.* vi. 642 A, represents him as inspired by the prophecy of Cham; by which, however, is probably intended, not the Egyptian and Phœnician wisdom as a whole, but a Gnostic work bearing that title.

[4] We are, in the first place, entirely ignorant on what tradition these statements are based; and next, it was easy and obvious to connect the teacher of Pythagoras (who was known to have held the Egyptian doctrine of Transmigration), as well as Pythagoras himself, with the Egyptians. The Chaldæans, in what concerns Pherecydes, were perhaps first added by Josephus; while the statement of Suidas probably originates with Philo of Byblus.

[5] On the personality of Epimenides, his activity in Athens, and the stories that connected themselves with him, cf. Diog. i. 109 sqq.; Suidas, Ἐπιμενίδης; Plutarch's *Solon*, 12; *S. Sap. Conv.* 14; *An seni s. ger. resp.* i. 12, p. 784; *Def. orac.* i. 1, p. 409; *De fac. lun.* 24, 25, p. 940; Plato, *Laws*, i. 642 D (and also my treatise on the Anachronisms of Plato, *Abhandlungen der Berlinischen Akademie*, 1873.

History of Philosophy, p. 95 sq.) What Damascius quotes from him is taken from his own theogony, Diog. i. 111.

[1] *De Princ.* c. 124, p. 384, Kopp.

[2] These two principles evidently represent, after the manner of the Hesiodic Theogony, a sexual syzygy: the Air, ὁ ἀήρ, is the male principle; Night, the female principle.

[3] Ap. Damascius (*loc. cit.*) again according to Eudemus; Brandis, p. 85, also rightly refers to Plato, *Symposium*, 178 C, *Schol. Theocrit. argum.* Id. xiii. Clem. *Al. Strom.* vi. 629 A. *Josephus contra Apionem*, i. 3.

[4] *Schol. Theocrit.* classes him as the son of Night and Æther.

a number of divinities being the result of their union. There are some other traces of cosmogonic tradition;[1] but we pass them over, in order to proceed at once to the consideration of the Orphic cosmogonies.[2]

Four versions of such cosmologies are known to us under the name of Orpheus. In one of these, the version used by Eudemus[3] the Peripatetic, and most probably before his time by Aristotle[4] and Plato,[5]

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[1] Alluded to by Brandis, *loc. cit.*, p. 86. It is said that Ibycus, Fr. 28 (10), like Hesiod, made Eros spring from Chaos; and that the comic poet Antiphanes, ap. Irenæus (*adv. Hær.* ii. 14, 1), differed on some points from Hesiod.

[2] For what follows, cf. Schuster, *De vet. Orphicæ Theogoniæ indole.* Leipzig, 1869.

[3] Damascius, c. 124, p. 382. That by this Eudemus is intended the pupil of Aristotle, is plain from Diogenes, *Proœm.* 9. Cf. Damascius, p. 384.

[4] *Metaph.* xii. 6, 1071 b, 26: *ὡς λέγουσιν οἱ θεολόγοι οἱ ἐκ νυκτὸς γεννῶντες.* *Ibid.* xiv. 4, 1091 b, 4: *οἱ δὲ ποιηταὶ οἱ ἀρχαῖοι ταύτῃ ὁμοίως, ᾗ βασιλεύειν καὶ ἄρχειν φασὶν οὐ τοὺς πρώτους, οἷον νύκτα καὶ οὐρανὸν ἢ χάος ἢ ὠκεανὸν, ἀλλὰ τὸν Δία.* These words cannot refer simply to systems in which Night, though placed among the oldest deities, occupies only a third or fourth place (as is the case in the Hesiodic and ordinary Orphic theogony). They presuppose a cosmology in which either Night alone, or Night in conjunction with other equally original principles, has the first place; for *Metaph.* xii. 6 treats of the primitive state which preceded all Becoming; and in reference to this, Aristotle says it is equally impossible for the theologians, who make all things arise out of Night, and for the physicists, who commence with the mixture of all things, to explain the beginning of motion. Also the second passage agrees so little with the ordinary Orphic cosmology, that Syrianus, commenting on it (*Schol. in Aris.* 935 a, 18), finds fault with Aristotle for misrepresenting the Orphic doctrine. This passage must equally point to a theogony like that spoken of by Eudemus; for here Night is made the first principle; as with Hesiod, Chaos, and with Homer, Oceanus; the sky it certainly is not in either of the representations known to us; but in the Eudemic Orpheus, the sky occupies the second place, and in Hesiod the third. As the Eudemic Orpheus alone, as far as we know, with the exception of Epimenides, puts Night in the place of Chaos as the first of all things, it is very probable that Aristotle, as well as his scholar Eudemus, may be referring to him.

[5] Schuster (*loc. cit.* 4 sqq.) thinks this is probable from *Crat.* 402 B, and *Tim.* 40 D sq. (where by the poets who affirm themselves to be the sons of the gods are meant Orpheus and Musæus; these are mentioned by name, *Rep.* 364 E, while nothing of the kind is said

Night is represented as the first of all things. Beside Night are placed the Earth and the sky,[1] both of which apparently proceeded from Night, as with Hesiod the Earth came forth from Chaos; Night being here substituted for Chaos.[2] The children of Uranus and Gæa are Oceanus and Thetis;[3] obviously a very slight departure from the Hesiodic tradition. A second theogony (perhaps an imitation, or possibly the foundation of Pherecydes' story of the battle of the gods) seems to be alluded to by Apollonius,[4] for he represents his Orpheus as singing how at first earth and sky and water separated themselves out of the commingling of all things, how sun and moon and stars began their courses, and mountains, rivers and animals came into being; how Ophion and Eurynome, daughter of Oceanus, ruled in Olympus, how they were afterwards hurled into

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of Hesiod). It is no argument against it (as Schuster shows), that in the verses quoted by Cratylus, the marriage of Oceanus and Thetys is described as the first marriage, whereas they themselves are the children of Uranus and Gæa; and because the *Timæus* begins the sketch of the Theogony with the words, Γῆς τε καὶ Οὐρανοῦ παῖδες Ὠκεανός τε καὶ Τηθὺς ἐγενέσθην, it does not follow that Plato denies Night to be the first principle. If the passage related to the Hesiodic Theogony (which does not, like Plato, make Cronos and Rhea children of Oceanus and Thetys), Chaos and Night would still have been passed over; but Plato could as well leave out Night in this passage as Aristotle, *Metaph.* xiv. 4, the earth; and *Metaph.* i. 8, 989 a, 10 (φησὶ δὲ καὶ Ἡσίοδος τὴν γῆν πρώτην γενέσθαι τῶν σωμάτων), Chaos. He begins with those gods who, as parents, open the series of gods springing from sexual union; what was prior to the earth and the heavens he does not enquire.

[1] Eudemus, *loc. cit.*; Joannes Lydus, *De mensibus*, ii. 7, p. 19, *Schow*. His words, τρεῖς πρῶται κατ' Ὀρφέα ἐξεβλάστησαν ἀρχαὶ, νὺξ καὶ γῆ καὶ οὐρανὸς, are rightly applied to this Eudemic 'Theology of Orpheus' by Lobeck, i. 494.

[2] In favour of this theory, vide Arist. *Metaph.* xii. 6 (*supra*, 98, 4), and especially Damascius, p. 382: ἡ δὲ παρὰ τῷ Περιπατητικῷ Εὐδήμῳ ἀναγεγραμμένη ὡς τοῦ Ὀρφέως οὖσα θεολογία πᾶν τὸ νοητὸν ἐσιώπησεν . . . ἀπὸ δὲ τῆς νυκτὸς ἐποιήσατο τὴν ἀχρήν.

[3] According to Plato; cf. p. 98, 5.

[4] *Argonaut.* i. 494 sqq.

the ocean by Cronos and Rhea, and these in their turn were overthrown by Zeus. Traces of this theogony are also to be met with elsewhere;[1] but philosophic conceptions are as little to be detected in it as in the poems of Hesiod. A third Orphic cosmogony[2] places at the beginning of cosmical development water and primitive slime, which latter solidifies and forms the earth. From these two a dragon arises, winged, and with the face of a god: on one side he has the head of a lion, and on the other that of a bull. He is called by the mythologists, Heracles and Chronos, the never-aging one; with him is united Necessity, or Adrastea (according to Damascius, in a hermaphrodite form), who is said to be spread abroad incorporeally throughout the universe to its remotest ends. Chronos-Heracles produces a gigantic egg,[3] which, dividing in the midst, forms with its upper half the sky, and with its lower, the earth. There seems to have been further mention[4] of a god who had golden wings on his shoulders, bulls' heads on his haunches, and a huge snake appearing among various animal forms on his head; this god, described by Damascius as incorporeal, is called Protogonos or Zeus, and also Pan, as bringing order into all things. Here not only is the symbolism far more complicated than with Eudemus, but the thoughts, too, are in advance of the cosmogonies we have been considering. Behind Chronos and Adrastea are the abstract notions of time and necessity; the incorporeality of Adrastea and Zeus presupposes a discrimination of corporeal and spiritual which was unknown even to Philosophy until the appearance of Anaxagoras; the spreading out of Adrastea through the universe reminds us of the Platonic doctrine of the World-soul; and in the conception of Zeus as Pan we recognise a pantheism, the germ of which lay, indeed, from the beginning in the naturalistic religion of the Greeks, but which cannot be proved by authentic evidence to have actually existed before the period when the individuality of the various gods had been destroyed by religious syncretism, and when Stoicism had done much to spread abroad the pantheistic theory of the universe; for none of the older systems, however pantheistic in tendency, had so great or so general an influence. The pantheistic element comes out still more clearly in the story of the birth and swallowing of Phanes[1] (*infra*, pp. 104, 106).

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[1] Cf. what is cited by Preller, *Rhein. Mus. N. F.* iv. 385 sq., from Lycophr. *Alex.* v. 1192; and Tzetzes, in h. l., *Schol. Aristoph. Nub.* 247; *Schol. Æschyl. Prom.* 955; Lucian, *Tragodopod.* 99. Though Orpheus is not named in these passages, we find in them, as in the Orpheus of Apollonius, that Ophion, Chronos and Zeus are regarded as the three kings of the gods, of whom the two first were overthrown by their successor. Perhaps the statement of Nigidius Figulus relates to the same theogony (Serv. *ad Ecl.* iv. 10), namely, that according to Orpheus, Saturn and Jupiter were the first rulers of the world; the tradition which he follows, however, seems to have set aside Ophion and Eurynome.

[2] Ap. Damascius, 381. Athenag. *Supplic.* c. 15 (18).

[3] According to Brandis, i. 67, Chronos first begot Æther, Chaos and Erebus, and afterwards the egg of the world; Lobeck's view of the passage (*Aglaoph.* i. 485 sq.), however, seems to me undoubtedly correct; according to this view, what is said of the begetting of Æther &c. is referred, not to the cosmogony of Hellanicus, but to the usual Orphic theogony in which it is really to be found.

[4] The confused representation of Damascius leaves it somewhat uncertain whether these features really belong to this theogony.

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[1] That this trait was present in the Orphic theogony of Hellanicus is clear from Athenag. c. 16 (20), for it is most improbable that he should have taken the Orphic verses mentioning Phanes from any other exposition than that from which he had previously made quotations exactly corresponding with the Hellanicus theogony of Damascius.

If, therefore, this cosmogony, as is usually supposed,[1] was known to Hellanicus of Lesbos in the middle of the fifth century, we must assign many ideas which appeared only in the later Greek Philosophy to an earlier period. Lobeck, however (*loc. cit.*), and Müller[2] rightly question whether such could have been the case. Damascius himself hints at the doubtful source of the account he follows;[3] its content bears pretty evident internal traces of an after date, and as we certainly know that spurious writings of a very late period were circulated[4] under the name of the Lesbian logographer,

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Cf. Schuster, p. 32, whose other conjectures, however, p. 83, do not commend themselves to me.

[1] Which Brandis accepts, *loc. cit.* p. 66.

[2] *Fragmenta hist. Græc.* i. xxx.

[3] His words, *loc. cit.*, are: Τοιαύτη μὲν ἡ συνήθης Ὀρφικὴ θεολογία. ἡ δὲ κατὰ τὸν Ἱερώνυμον φερομένη καὶ Ἑλλάνικον, εἴπερ μὴ καὶ ὁ αὐτός ἐστιν, οὕτως ἔχει. They appear to me to convey that the work of which they are treating was attributed to Hieronymus as well as to Hellanicus, and that Damascius himself, or his authority, was of opinion that under these two names one and the same author was concealed; who in that case naturally could not have been the ancient logographer of Lesbos.

[4] Vide Müller, *loc. cit.* Schuster, in his excursus on the theogony of Hellanicus, *loc. cit.* pp. 80–100, conjectures with Lobeck that its author was Hellanicus, otherwise unknown to us, the father of the philosopher Sandon (Suidas, Σάνδων), whose son (the Stoic Athenodorus of Tarsus) was the instructor of Augustus, and whom Schuster calls, I know not why, Apollodorus. This conjecture has in its favour that Sandon, according to Suidas, wrote ὑποθέσεις εἰς Ὀρφέα; and if Hellanicus, like his grandson, and probably also his son, was a Stoic, this would agree with the fact that the theogony (as Schuster, *loc. cit.* 87 sqq. proves) has points of contact with the Stoic pantheism and treatment of myths. The saying of Damascius, however, quoted in note 3, seems to me to contradict this assumption. If Hellanicus of Tarsus, in the end of the second century before Christ, published an Orphic theogony under his own name, it is difficult to see how this work could bear the name of Hieronymus as well, and how Damascius could imagine that the same author was concealed under these two names. Schuster (p. 100) believes that Hellanicus wrote the theogony, but borrowed the material of the first part from a work by Hieronymus. But this theogony cannot have been known as the production of Hellanicus, for Athenagoras expressly ascribes to Orpheus the

there is every probability that the Orphic theology does not belong to him at all, whatever may be the truth as to its authorship and the time of its composition.

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verses which Schuster rightly considers as having belonged to this work; besides, it was natural that a poem professing to set forth an Orphic theogony should announce itself as a work of Orpheus. Damascius does not say that Hellanicus and Hieronymus were described as the *authors* of the theogony; but as he calls the theogony used by Eudemus, c. 124: *ἡ παρὰ τῷ περιπατητικῷ Εὐδήμῳ ἀναγεγραμμένη*; so by *ἡ κατὰ τὸν Ἱερώνυμον φερομένη καὶ Ἑλλάνικον*, he must mean a theogony, the contents of which Hieronymus and Hellanicus had expounded, but the *author* of which, as of all the other theogonies, was Orpheus. As to the fact that the divergences from the commonly received Orphic theogony are the same in both cases, and that Damascius conjectures the two authors to be one and the same, the easiest explanation seems to be that this exposition may have been found in two manuscripts, of which one bore the name of Hellanicus, and the other that of Hieronymus, and that Damascius believed one of these to have been falsely ascribed to its so-called author by the real author of the other. Now it appears from Porph. *ap. Euseb. præp. ev.* x. 3, 10, Suidas, *Ζάμολξις*, Athen. xiv. 652 a, and others (cf. Müller, *loc. cit.* and i. 65 sqq.), that in later times writings about foreign nations were in circulation under the name of Hellanicus of Lesbos, the authenticity of which there was good reason to doubt; in particular, the *Αἰγυπτιακὰ* is mentioned as a work that stands in Epictetus, *Diss.* ii. 19, 14; cf. Photius, *Cod.* 161, p. 104 a, 13 sq., for the type of a book of fables, and cannot possibly have emanated from the Lesbian writer, if only because Moses is mentioned in it (v. Justin, *Cohort.* 9, p. 10 a). We hear, on the other hand (Joseph. *Ant.* i. 3, 6, 9), of an Egyptian Hieronymus, who wrote an *ἀρχαιολογία φοινικική*, but who cannot possibly (as Müller, *loc. cit.*, believes) be the same person as the Peripatetic of Rhodes. It seems a probable conjecture (Müller, ii. 450) that he was the person who, according to Damascius, had transmitted this Orphic theogony; and the idea gains considerable support from the observation (Schuster, *loc. cit.* 90 sqq.) that this theogony in its commencement, just where it differs from the ordinary Orphic theogony, coincides with the Phœnician cosmogonies. This Hieronymus may have affixed the name of Hellanicus to the *Αἰγυπτιακὰ* at the same time that he published the Phœnician history under his own name, and may have expressed himself in both works to the same effect concerning the Orphic theogony. That he composed such a theogony is, as we have said, unlikely. He seems rather to have confined himself to developing what he took from the common theogony by borrowing the notion of water and primitive slime from the Phœnician cosmology. His exposition must have been used by Athenagoras as well as by Damascius, for a Neo-Platonist can hardly be suspected of dependence on the

Lobeck considers that we have a more ancient Orphic cosmogony in that designated by Damascius (c. 123, p. 380) as the usual Orphic theogony, or the one contained in the rhapsodies, and of which many fragments and notices[1] have been preserved. Here Chronos is represented as the first of all existences. He brings forth Æther and the dark immeasurable abyss, or Chaos: from these he then forms a silver egg, out of which, illuminating all things, proceeds Phanes, the first-born god, called also Metis, Eros, and Ericapæus;[2] he contains within himself the germs of all gods, and for this reason, as it would appear, is described as hermaphrodite, and endowed with various animals' heads, and other attributes of the kind. Phanes alone begets Echidna, or Night, and, in marriage with her, Uranus and Gæa, the progenitors of the intermediate races of gods, whose history and genealogy are essentially the same as with Hesiod. When Zeus attains sovereignty he devours Phanes, and consequently is himself (as in our previous quotation from Orpheus[3]) the ideal sum (*Inbegriff*) of all things. After having thus united all

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Christian apologist (Schuster, p. 81); and besides, the exposition of Damascius goes farther than that of Athenagoras; what is said in the former of Hellanicus and Hieronymus is wanting in the latter.

[1] Cf. Lobeck, *loc. cit.* 405 sqq.

[2] There have been many conjectures as to the signification of this name. Cf. Göttling, *De Ericap.* (Jena, 1862), who derives it from ἔαρ and κάπος or κάπυς (breath), *ventorum vernalium afflatus*; Schuster, *loc. cit.* 97 sq. With the majority of commentators, I consider an Eastern origin probable, though I must leave it an open question whether Delitzsch (cf. Schuster, *loc. cit.*) has most reason for referring it to the Cabbalistic designation of the first of the ten Sephiroth, אֲרִיךְ אַנְפִּין (long-visaged), or Schelling (*Gotth. v. Samothr.* W. W. i. Abth. viii. 402 sq.) for preferring the Old Testament אֶרֶךְ אַפַּיִם (long-suffering).

[3] Cf. *supra*, p. 64 sq.

things in himself, he again puts them forth, producing the gods of the last generation, and forming the world. Among the stories of the younger gods (for the rest of which I must refer the reader to Lobeck), the most striking is that of Dionysus Zagreus, son of Zeus and Persephone, who, rent in pieces by the Titans, comes to life again in the second Dionysus, after Zeus has swallowed his heart, which was still entire.

The theory that this whole theogony dates from the period of Onomacritus and the Pisistratidæ, since the time of Lobeck[1] has found much favour, but I am unable to support it. The utterances of ancient authors which are supposed to contain allusions to such a theogony, do not carry us beyond the theogony which Eudemus made use of. Its existence is first distinctly attested in the pseudo-Aristotelian treatise on the world,[2] subsequently therefore to the Christian era, or at any rate not long before it;[3] for, as we have seen (*supra*, p. 65 sq.), the passage from the Platonic Laws (iv. 715 E) proves nothing, and still less can be deduced from the Aristotelian citation,[4] on which Brandis[5] relies so much. Since Plato in the 'Symposium' (178 B) does not mention Orpheus among those who assert the antiquity of Eros, we may rather indeed suppose that the doctrine of this theogony, in regard to Eros-Phanes, was unknown to him; and since Aristotle's indications, as above noted, only correspond with the theogony used by Eudemus, we cannot refer them to any other. If, however, Plato, Aristotle, and Eudemus did not possess that representation of the Orphic doctrines, which was at a later period in ordinary use, we must conclude with Zoëga[1] and Preller,[2] that it was not in circulation until after their time. I agree likewise with Zoëga that so learned a mythographer as Apollonius[3] would scarcely have made Orpheus sing of Ophion and Eurynome as the first rulers of the world, and Cronos and Rhea as the second, if the Orphic tradition then current had recognised Phanes and the elder gods. Even subsequently to this there are still traces to show that Phanes, the illuminating one, the centre of the subsequent Orphic cosmogony, was only another name for Helios, who, according to the later representation, was a much younger god.[4] Lastly, if we consider the story of Phanes, with the description of Zeus that is involved in it, with reference to its internal character and purpose, we shall find that it is impossible to assign this story to a very early period. Not only do we clearly discover in it that pantheism of which we have already spoken,[1] but the story can only be accounted for by a desire to reconcile the later interpretation, according to which Zeus is the ideal sum of all things, and the unity of the world, with the mythological tradition which represents him as the progenitor of the last generation of gods. To this end the Hesiodic myth of the swallowing of Metis by Zeus (in its origin most likely a rude symbolical expression for the intelligent nature of the god) is introduced, Metis being combined with the Helios-Dionysus of the earlier Orphic theology, with the creative Eros of the cosmogonies, and also perhaps with Oriental divinities, to form the personality of Phanes. Such an attempt, it is clear, could not have been made until the period of that religious and philosophic syncretism, which from the third century before Christ gradually gained ground, and was first reduced to a system by the allegorical interpretation of myths among the Stoics.[2] To that period therefore we must assign the elaboration of the Orphic theogony which we have now been considering.

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[1] Lobeck, however, advances it (p. 611) very cautiously, *ut statim cessurus, si quis Theogoniam Orphicam Platone aut recentiorem aut certe non multo antiquiorem esse demonstraverit.*

[2] C. 7; according to Lobeck (i. 522 and elsewhere) we must suppose this to be an interpolation.

[3] The date of Valerius Soranus is rather earlier. Varro in Augustine's *Civit. Dei*, vii. 9, gives us two verses of his, which seem to refer to the Orphic theogony, and perhaps to the particular passage quoted from περὶ κόσμου. Yet he was only a later contemporary of Cicero.

[4] *Metaph.* xiv. 4; cf. *supra*, p. 98, 4.

[5] *Loc. cit.* p. 69.

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[1] *Abhandlungen*, edited by Welcker, p. 215 sqq.

[2] In Pauly's *Real-Encyl.* v. 999.

[3] Cf. *supra*, p. 99.

[4] Diodorus, i. 11: many ancient poets call Osiris, or the sun, Dionysus: *ὧν Εὔμολπος μὲν . . . ἀστροφανῆ Διόνυσον . . . Ὀρφεὺς δέ· τοὔνεκά μιν καλέουσι Φάνητά τε καὶ Διόνυσον.* Macrob. i. 18: *Orpheus solem volens intelliqi ait inter cetera: . . . ὃν δὴ νῦν καλέουσι Φάνητά τε καὶ Διόνυσον.* Theo. Smyrn. *De Mus.* c. 47, p. 164, Bull, from the Orphic *ὅρκοι*: *ἠέλιόν τε, φάνητα μέγαν, καὶ νύκτα μέλαιναν*—*φάνητα μέγαν*, standing here, as the want of a connecting particle shows, in apposition to *ἠέλιον*: Helios the great illuminator. Iamblichus, *Theol. Arith.* p. 60: the Pythagoreans call the number ten *φάνητα καὶ ἥλιον*. Helios is often named *Φαέθων*; e.g. *Iliad*, xi. 735. *Od.* v. 479; in the epitaph in Diog. viii. 78, and elsewhere.

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[1] Vide *supra*, p. 64 sq.

[2] Schuster is of a different opinion, though he agrees with me in placing the rhapsodic theogony not earlier than the last century, or last but one, before Christ. The verses, he says (p. 42 sq.), which are quoted in the writing *περὶ κόσμου, loc. cit.*, could very well date from the time of the Pisistratidæ, as they do not go beyond the well-known fragment of Æschylus (cited Part II. a, 28, 2); and the myth of Phanes-Ericapæus, as well as that of Dionysus Zagreus, need not have come to Greece from the East earlier than the sixth century. In this, however, as it seems to me, the peculiar character of the Orphic fragments has not been sufficiently attended to. Pantheistic conceptions are certainly found in the poets of the fifth century, and even earlier; but it is one thing to say generally, 'Zeus is Heaven and Earth,' and quite another to identify Zeus in detail, as these verses do, with all the different parts of the world, and among other things to attribute both sexes to him (*Ζεὺς ἄρσην γένετο, Ζευς ἄμβροτος ἔπλετο νύμφη*). No representation of the latter kind can be proved to have

To sum up, then, the results of our enquiry, the direct gain which Philosophy has derived from the ancient cosmologies appears to be less than we may have been disposed to believe. Firstly, because the conceptions on which they are founded are so simple that thought could well have attained to them without any such help, so soon as it began to apply itself to the scientific investigation of things; and, secondly, because these cosmologies in their mythical symbolism are so ambiguous, and intermingled with so many fantastic elements, that they afford a very uncertain foundation for intelligent reflection. If, therefore, the ancient theologians are to be considered the precursors of the later physicists, their merit, as was asserted at the outset of our enquiry, mainly consisted in this: that they turned the current of reflection towards cosmological questions, and left to their successors the problem of explaining the totality of phenomena by the investigation of its ultimate causes.

existed in the more ancient period. We cannot even argue directly from Æschylus, or his son Euphorion (the probable author of the fragment), to Onomacritus and the time of the Pisistratidæ. Lastly, in the Orphic verses, Zeus is said to be all, because he has concealed all things in himself, and brought them again to light; and that (as already shown on p. 65) is the true meaning of the stories about Phanes in the later Orphic theogony. There is nothing analogous to this thought before the appearance of the Stoic philosophy. It seems the most probable supposition, therefore, that this feature was really imported from the Stoics into the Orphic theology, and was merely a lifeless imitation of the theory (Part III. a, 139, second edition) that the Deity from time to time took all things back into himself, and again put them forth.

§ V.—*Ethical Reflection. Theology and Anthropology in their relation to Ethics.*

If the external world roused the Greeks in their lively feeling for nature to attempt cosmological speculation, the life and ways of men must no less have occupied the mind of a nation so intelligent and versatile, so full of freedom and capability in practical life. It was inevitable, however, that reflection should take a different course in regard to Ethics from that which it followed in regard to cosmology. The external world presents itself even to sensuous perception as a whole,—a building, the floor of which is the earth, and the roof, the vault of heaven; in the moral world, on the contrary, the unpractised glance sees nothing at first but a confused mass of individuals or small aggregates moving about capriciously and promiscuously. In the one case, attention is chiefly fixed upon the cosmos, the grand movements of the heavenly bodies, the varying conditions of the earth, and the influence of the seasons,—in short, upon universal and regularly recurring phenomena; in the other case, the interest centres on personal actions and experiences. There the imagination is required to fill up the lacunæ in man's knowledge of nature by means of cosmological inventions; here we require the understanding to set rules for practical conduct in specific cases. While therefore, cosmological reflection is from the outset employed upon the whole, and seeks to elucidate its origin, ethical reflection restricts itself to particular observations and rules of life, which are indeed founded on a uniform manner of regarding moral relations, but are not consciously and explicitly reduced to general principles; and are only connected with more universal considerations respecting the lot of man, the future destiny of the soul, and the Divine government, in the indeterminate and imaginative mode of religious presentation. Ethical reflection is therefore much more barren than cosmological; starting from a sound and intelligent observation of what is real, it has certainly contributed not a little to the formal exercise of thought; but having arisen from a practical rather than a scientific interest, and being concerned rather with particular cases than with general laws and the essential nature of moral action,—from a material point of view its influence on philosophic enquiry has been far less immediate than that of the old cosmology. The pre-Socratic Nature-Philosophy was directly connected with cosmology, but it was only in the sequel that there arose a scientific moral Philosophy, as the philosophic counterpart of popular wisdom.

Among the writings which show the growth of this ethical reflection, the Homeric poems must first be mentioned. The great moral importance of these poems rests, however, far less on the maxims and moral observations which occasionally appear in them, than on the characters and events which they depict. The tempestuous force of Achilles, the self-forgetful love of the hero for his dead friend, his humanity to the suppliant Priam, Hector's courage in death, Agamemnon's kingly presence, the ripe wisdom of Nestor, the inexhaustible cunning, the restless enterprise, the wary persistence of

Odysseus, his attachment to home and kindred, the sight of whom he prefers to immortality with the sea-goddess, the faithfulness of Penelope, the honour everywhere accorded in the poem to valour, prudence, fidelity, liberality, generosity to strangers and needy persons; and, on the other hand, the woes which ensued from the outrage of Paris, from the crime of Clytemnestra, from the treachery of the Trojans, from the discord of the Greek princes, from the arrogance of the suitors,—these and the like traits made the poems of Homer, in spite of all the barbarism and violence that still prevailed in the spirit of that time, a handbook of wisdom for the Greeks and one of the principal instruments of their moral education. Philosophy, too, has profited more in an indirect manner from these pictures of human life than directly from the reflections accompanying them. The latter are confined to short scattered moral sayings, like the beautiful utterance of Hector on fighting for one's country,[1] or that of Alcinous on our duty to desolate strangers,[2] or exhortations to courage, constancy, reconciliation, and so forth, which are given for the most part, not in a general form, but poetically, in reference to the particular occasion;[3] observations on the acts and ways of men, and their consequences,[4] reflections on the folly of mortals, the wretchedness and uncertainty of life, resignation to the will of the gods, abhorrence of injustice.[1] Such utterances incontestably prove that not only moral life, but also reflection on moral subjects, had made a certain degree of progress in the time to which the poems of Homer belong, and what has previously been said on the importance of popular wisdom in regard to Philosophy applies with equal force here. We must not, however, on the other hand, overlook the distinction between these incidental and isolated reflections, and a methodical moral Philosophy, conscious of the end it is pursuing.

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[1] *Il.* xii. 243: *εἷς οἰωνὸς ἄριστος, ἀμύνεσθαι περὶ πάτρης.*

[2] *Od.* viii. 546: *ἀντὶ κασιγνήτου ξεῖνός θ' ἱκέτης τε τέτυκται.* Cf. *Od.* xvii. 485 and elsewhere.

[3] Such as the numerous speeches of the chiefs: *ἀνέρες ἐστὲ* &c.; or the discourse of Odysseus, *τέτλαθι δὴ κραδίη*, *Od.* xx. 18; or the exhortation of Phœnix, *Il.* ix. 496, 508 sqq.; or Thetis' injunction to Achilles, *Il.* xxiv. 128 sqq.

[4] Such as the sentences: *Il.* xviii. 107 sqq. on anger. *Il.* xx. 248, on the use of the tongue; *Il.* xxiii. 315 sqq. praise of prudence; the observation in *Od.* xv. 399, and others.

Hesiod's rules of life and moral observations are of a similar character; but it must be regarded as some approximation to the modes of scientific reflection, that he utters his thoughts on human life, not merely incidentally in the course of an epic narration, but in a didactic poem designed for this express purpose. In other respects, even apart from the economic directions, and the various superstitious prescripts, which occupy the second part of the 'Works and Days,' the thoughts are as incoherent, and as much derived from single experiences, as the maxims in the Homeric discourses. The poet exhorts to justice, and warns against injustice, for the all-seeing eye of Zeus watches over the actions of men; well-doing alone brings blessing;

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[1] Thus in *Od.* xviii. 129: *οὐδὲν ἀκιδνότερον γαῖα τρέφει ἀνθρώποιο* etc. *Il.* vi. 146 (cf. xxi. 464): *οἵη περ φύλλων γενεὴ τοιήδε καὶ ἀνδρῶν.* *Il.* xxiv. 525: The fate of mortals is to live among sighs; Zeus decrees prosperity or adversity as he wills. *Od.* vi. 188: bear what Zeus has ordained. On the other hand, cf. *Od.* 132: Man is wrong to call the gods the authors of evil, which he himself has brought down upon himself by his faults.

crime, on the contrary, will be punished by the gods.[1] He recommends frugality, diligence and contentment, and warmly rebukes the opposite faults;[2] he says it is better to keep the toilsome path of virtue than to follow the more attractive road of vice;[3] he counsels prudence in business, friendliness to neighbours, courtesy to all who are courteous to us.[4] He complains of the troubles of life, the cause of which he seeks, like the mythologists, in wrong done to the gods by the pride and presumption of men.[5] In the account of the five ages of the world,[6] he describes (it may be under the influence of historical reminiscences[7]) the gradual deterioration of man and his circumstances. Though in this Hesiod departs considerably, in many respects, from the spirit of the Homeric poems, yet the stage attained by moral reflection is in both cases essentially the same. But in Hesiod it assumes a more independent attitude, for which reason only we recognise in him, rather than in Homer, the precursor of the Gnomic poets.

We should be better able to trace the farther development of this reflection if more remained to us of the numerous poems written in the next three centuries. Very few of such fragments as we possess carry us beyond the beginning of the seventh century, and these contain scarcely anything relevant to our present enquiry. Even from the fragments of the seventh century we can glean but very little. We may listen, indeed, to Tyrtæus,[1] exalting courage in battle, and death for one's country; or describing the disgrace of the coward and the unhappiness of the conquered; we get from Archilochus[2] (Fr. 8, 12–14, 51, 60, 65), from Simonides of Amorgos[3] (Fr. 1 sqq.), from Mimnermus[4] (Fr. 2 *et passim*), complaints of the transitoriness of youth, the burdens of old age, the uncertainty of the future, the fickleness of men; and, at the same time, exhortations to limit our desires, to bear our fate manfully, to commit the results of our actions to the gods, to be moderate both in sorrow and in joy. We find in Sappho[5] gnomic sentences, such as these: 'The beautiful is also good, the good is also beautiful' (Fr. 102); 'Wealth without virtue does not profit, but in their union lies the acme of happiness.' Nor must we omit to mention in this connection Simonides' elaborate satire on women (Fr. 6). On the whole, however, the older lyricists, as also the great poets in the end of the seventh century, Alcæus and Sappho, and long after them Anacreon, seem to have dealt but sparingly in such general reflections. It was not until the sixth century, contemporaneously, or nearly so, with the rise of Greek Philosophy, that the didactic element in poetry appears to have again attained greater importance. To that period belong the Gnomic poets—Solon, Phocylides, and Theognis; their sayings, however, even irrespective of what we know to be interpolated, are mostly of doubtful authenticity. During the first half of the sixth century Æsop also lived, whose legendary form seems at any rate to prove that instructive fables about animals, in connection with the general growth of moral reflection, had then become greatly developed and popularised. In all these writers we find, as compared with the older poets, an advance clearly indicating that thought had ripened by the acquisition of more varied experience, and by the study of more complex situations. The Gnomic poets of the sixth century had before their eyes an agitated political existence, in which the manifold inclinations and passions of men found ample scope, but in which also the vanity and evil of immoderate aims and intemperate conduct had been demonstrated on a grand scale. Their reflections, therefore, are no longer concerned merely with the simple affairs of the household, the village, or the ancient monarchy; the condition of man as to his political circumstances is the prominent and determining element even in their general moral prescripts and observations. They heap up lamentations over the misery of life, the illusions and instability of men, and the vanity of all human endeavours; but it is only to assert the more forcibly that the moral problem consists in seeking man's greatest happiness in the maintenance of just measure, in the order of the commonwealth, in the impartial distribution of justice, in the reasonable repression of his desires. This tone is already predominant in the elegies ascribed to Solon. No mortal, we are there told, is happy, all are full of trouble[1] (Fr. 14); each thinks to find the right, and yet no one knows what will be the result of his doings, and no one can escape his destiny (Fr. 12, 33 sqq., Fr. 18);[2] hardly any can be trusted (cf. Fr. 41), none keeps measure in his efforts; the people by its own injustice destroys the city, which the gods would have protected (Fr. 3, 12, 71 sqq.). As opposed to these evils, the first necessity is law and order for the state, contentment and moderation for the individual; not wealth, but virtue, is the highest good; superfluity of possessions begets only self-exaltation; man can be happy with a moderate amount, and ought in no case to draw down upon himself the certain punishment of God by unrighteous gains.[3] The well-being of the state depends upon a similar disposition. Lawlessness and civil discord are the worst evils, order and law the greatest good for a commonwealth; right and freedom for all, obedience to the government, just distribution of honour and influence—these are the points which the legislator should keep in view, no matter what offence he may give by it.[4]

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[1] Ἔργα καὶ ἡμέραι, 200–283, 318 sqq.

[2] *Ibid.* 359 sqq. 11 sqq. 296 sqq.

[3] *Ibid.* 285 sqq.

[4] *Ibid.* 368 sqq. 704 sqq. 340 sqq.

[5] In the myth of Prometheus (Ἔργα καὶ ἡμέραι, 42 sqq.; Theognis, 507 sqq.), of which the general significance is the same as other mythical explanations of the evils by which we feel ourselves oppressed; namely, that man, discontented with his originally happy and childlike state, stretched forth his hand towards good things which God had forbidden him.

[6] Ἔργα καὶ ἡμέραι, 108 sqq.

[7] Cf. Preller, *Demeter und Persephone*, 222 sqq.; *Griech. Mythol.* i. 59 sq.; Hermann, *Ges. Abh.* p. 306 sqq. and others. We must not, however, be too minute in our conjectures concerning the historical circumstances on which this mythus is founded.

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[1] Fr. 7–9 in Bergk's edition of Greek lyrics, to which the following quotations relate. Tyrtæus lived about 685 B.C.

[2] About 700 B.C.

[3] Before 650 B.C.

[4] About 600 B.C.

[5] About 610 B.C.

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[1] Fr. 14. *οὐδὲ μάκαρ οὐδεὶς πέλεται βροτὸς, ἀλλὰ πονηροὶ πάντες*; here *πονηρὸς*, in opposition to *μάκαρ*, is not to be understood actively (*πόνος*, causing evil), but passively (*πόνος*, suffering evil, *ἐπίπονος*), as in the well-known verse of Epicharmus (vide *infra*, chapter on Pythagoreism, *sub fin.*) in Hesiod, Fr. 43, 5 *et passim.*

[2] In Herodotus, 1, 31, Solon distinctly says that death is better for men than life.

[3] Fr. 7, 12, 15, 16, and the well-known story of Herodotus, i. 30 sqq.

[4] Fr. 3, 30 sqq. 4–7, 34, 35, 40.

We meet with the same principles in the few authentic fragments that remain to us of the writings of Phocylides (about 540 B.C.). Noble descent is of no avail to individuals, nor power and greatness to the state, unless in the one case wisdom is superadded, and in the other order (Fr. 4, 5). Mediocrity is best; the middle rank is the happiest (Fr. 12); justice is the ideal sum of all virtues.[1] With these ideas Theognis[2] also substantially agrees; but in this writer we find sometimes his aristocratic view of politics, and sometimes his dissatisfaction with his lot (a consequence of his own personal and political experiences), brought into undue prominence. Brave and trustworthy people are rare, Theognis thinks, in the world (v. 77 sqq. 857 sqq.). Mistrustful circumspection is the more to be recommended in our intercourse with our fellow men (v. 309, 1163), the harder it is to fathom their sentiments (v. 119 sqq.). Truth, he complains (v. 1135 sqq.), and virtue, sincerity and the fear of God have deserted the earth; hope alone remains. Vain is the attempt to instruct the wicked, instruction will not alter them.[3] Fate, however, is as unjust as mankind. The good and the bad fare alike in the world (v. 373 sqq.); good fortune does more for a man than virtue (v. 129, 653); foolish conduct often brings happiness, and wise conduct, misery (v. 153, 161 sqq.); sons suffer for their fathers' crimes; the criminals themselves go unpunished (731 sqq.). Wealth is the only thing that men admire;[1] he who is poor, be he never so virtuous, remains wretched (137 sqq. 649). The best thing for man, therefore, is never to be born; the next best to die as soon as possible (425 sqq. 1013): no one is truly happy. But though this sounds very disconsolate, Theognis ultimately arrives at the same practical result as Solon; not indeed in reference to politics, for he is a decided aristocrat—the nobly born are with him the good; the mass of the people, the bad (e g. v. 31–68, 183 sqq. 893 *et passim*). His general moral standpoint, however, approaches very nearly to that of Solon. Because happiness is uncertain, and because our lot does not depend upon ourselves, he tells us we have all the greater need of patience and courage, of equability and self-possession in good fortune and in evil (441 sqq. 591 sqq. 657). What is best for man is prudence, what is worst is folly (895, 1171 sqq. 1157 sqq.); to guard against arrogance, not to overstep the right measure, to keep the golden mean, is the height of wisdom (151 sqq. 331, 335, 401, 753, 1103 *et passim*). Here, a philosophic moral principle is of course still wanting, for these scattered rules of life are not as yet based upon general enquiries concerning the essence of moral activity, but the various influences and experiences are already beginning to unite, much more consciously and definitely than with the older poets, to form a uniform and connected theory of human life.

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[1] Fr. 18, according to others, of Theognis, or perhaps taken from some unknown writer.

[2] A native of Megara, contemporary of Phocylides.

[3] V. 429 sqq., with which (as Plato remarks in the *Meno*, 95 D) it is not very consistent that Theognis should say in v. 27, 31 sqq. *et passim*, that from the good we learn good; and from the evil, evil.

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[1] V. 699 sqq. Cf., among others, the Fragment of Alcæus in Diog. i. 31, and the saying there quoted of Aristodemus the Spartan, who by some authors is reckoned one of the seven wise men.

Antiquity itself marked the importance of the epoch when ethical reflection began to be more decidedly developed, by the legend of the seven sages. Their names, as is well known, are variously given,[1] and such details as have come down to us respecting their lives[2] sound so improbable that we must regard them as fiction rather than history. The maxims, too, which are ascribed to them[3] are intermingled to such an extent with later ingredients, and with proverbial expressions of unknown origin, that very few can be traced with any certainty to either of these men.[1] They are all, however, of the same character, consisting of isolated observations, maxims of prudence, and moral sentences belonging entirely to the sphere of popular and practical wisdom.[2] This quite accords with the circumstance that most of the seven sages were celebrated as statesmen and lawgivers.[3] We cannot but agree, therefore, with Dicæarchus[4] in regarding them as intelligent men, and capable legislators, but not as philosophers, or wise men in the sense of the Aristotelian School.[5] They only represent the practical culture which, about the end of the seventh century, received a new impulse in connection with the political circumstances of the Greek nation. Though they cannot be reckoned philo-

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[1] Only four are mentioned in all the enumerations: Thales, Bias, Pittacus and Solon. Besides these, Plato (*Prot.* 343 A) names also Cleobulus, Myso and Chilo; instead of Myso, most writers (as Demetrius Phalereus ap. Stobæus, *Floril.* 3, 79; Pausanias, x. 24; Diog. i. 13, 41; Plutarch, *Conv. S. Sap.*) substitute Periander for Myso. Euphorus ap. Diog. i. 41, and the author mentioned anonymously in Stobæus, *Floril.* 48, 47, have Anacharsis. Clemens, *Strom.* i. 299 B, says the accounts fluctuate between Periander, Anacharsis and Epimenides; the last is mentioned by Leander, who has also Leophantus in place of Cleobulus (Diog. *loc. cit.*); Dicæarchus leaves the choice of the three doubtful sages to be decided between Aristodemus, Pamphilus, Chilo, Cleobulus, Anacharsis, and Periander. Some include also Pythagoras, Pherecydes, Acusilaus, and even Pisistratus, in the number (Diog. and Clemens, *loc. cit.*). Hermippus ap. Diog. (*loc. cit.*) mentions seventeen names among which the accounts are divided; viz. Solon, Thales, Pittacus, Bias, Chilo, Myso, Cleobulus, Periander, Anacharsis, Acusilaus, Epimenides, Leophantus, Pherecydes, Aristodemus, Pythagoras, Lasus of Hermione, Anaxagoras; if we add Pamphilus and Pisistratus, and the three named by Hippobotus (ap. Diog. *loc. cit.*, together with nine others), Linus, Orpheus, and Epicharmus, we get in all twenty-two persons of very various periods, who were counted among the seven wise men.

[2] For instance, the anecdote related in Diog. i. 27 sqq., Phœnix in Athen. xi. 495, and elsewhere in different versions, of the tripod (or, as others say, the goblet, cup, or dish) which was fished up out of the sea, and intended for the wisest, was first given to Thales, passed on by him to another, and so on, until at last it returned to him again, and was dedicated by him to Apollo. Cf. the accounts of the meetings of the four sages in Plutarch; Solon, 4; Diog. i. 40 (where two descriptions of such meetings, probably analogous to those of Plutarch, are quoted from Ephorus and a certain Archetimus; cf. also the statement of Plato (*Protag.* 343 A) about the inscriptions they dedicated together at the temple of Delphi; the interpolated letters, ap. Diogenes, the assertion in Plut. *De Ei.* c. 3, p. 385, about Periander and Cleobulus.

[3] Vide Diog. i. 30, 33 sqq.; 58 sqq. 63, 69 sqq. 85 sq. 97

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sqq. 103 sqq. 108; Clemens, *Strom.* i. 300 A sq.; the collections of Demetrius Phalereus and Sosiades ap. Stobæus; *Floril.* 3, 79 sq.; Stobæus himself in different parts of the same work, and many others.

[1] For example, the lyric fragments in Diog. i. 71, 78, 85; the word of Pittacus, which Simonides quotes in Plato, *Prot.* 339 C; that of Cleobulus, also quoted by Simonides, ap. Diog. i. 90; that of Aristodemus, quoted by Alcæus, Diog. i. 31.

[2] The remarkable statement of Sextus (*Pyrrh.* ii. 65, M X, 45)—which would presuppose physical enquiries in others of the wise men besides Thales; viz. that Bias maintained the reality of motion—stands quite alone, and is probably only an idle and ingenious deduction from one of his poems or apophthegms.

[3] Solon and Thales were thus distinguished, as is well known; Pittacus was Aesymnetes of Mytilene; Periander, tyrant of Corinth; Myso, according to Hipponax (Fr. 34 b, Diog. i. 107), had been declared by Apollo the most blameless of men; the name of Bias was used proverbially for a wise judge (Hipponax, Demodicus, and Heracleitus ap. Diog. i. 84, 88; Strabo, xiv. 12, p. 636 *Cas.*; Diodorus, *Exc. de virtute et vit.* p. 552 *Wess*). Chilo is said by Herod. (i. 59) to have interpreted a miraculous portent.

[4] Diog. i. 40. Similarly Plutarch, *Solon*, c. 3 *sub fin.* The assertion to the contrary in the *Greater Hippias*, 281 c, ascribed to Plato, is manifestly incorrect.

[5] Cf. Arist. *Metaph.* i. 1, 2; *Eth. N.* vi. 7.

sophers, in the stricter meaning of the term, they stand on the threshold of Philosophy, a relation which tradition has strikingly expressed by distinguishing as the wisest of the seven, to whom the mythic tripod returns after completing its round, the founder of the first school of Natural Philosophy.

In order to acquaint ourselves thoroughly with the soil from which Greek Philosophy sprang, we have still to consider how far the notions of the Greeks about God and human nature, before the middle of the sixth century, had been altered in the course of advancing culture. That some change had occurred we may take for granted, for in proportion as the moral consciousness is purified and extended, the idea of Deity, from which is derived the moral law and the moral government of the universe, must also become purified and extended; and the more man realises his liberty and his superiority to other natural existences, the more will he be inclined to distinguish the spiritual element of his own nature in its essence, origin and future destiny from the corporeal element. The progress of morals and of ethical reflection was therefore of great moment to theology and anthropology; but their influence was more broadly apparent when Philosophy had attained to an independent development. The older poets, subsequent to Homer and Hesiod, in their notions of Deity, do not essentially transcend the standpoint of their predecessors; we can only discover, by slight indications, that a purer idea of God was gradually forming itself, and the presupposed plurality of gods more and more giving place to the conception of Zeus as the moral ruler of the universe. Under this aspect Archilochus celebrates him when he says (Fr. 79) that he beholds the works of men, both the evil and the good, and even watches over the doings of animals; and the more the poet is convinced that fate and fortune order all things, that the mind of man changes like the day which Zeus allots to him, that the gods raise those that are fallen, and cast down those that stand (Fr. 14, 51, 69)—the more earnest are his exhortations to commit all things to God. So also Terpander[1] consecrates the introduction of a hymn (Fr. 4) to Zeus, as the beginning and director of all things; and the elder Simonides sings (Fr. 1) that Zeus has in his hand the end of all that exists, and orders it as he wills. But similar passages are to be found even in Homer; and in this respect the difference between the two poets is, perhaps, only one of degree. Solon more decidedly passes beyond the older anthropomorphic idea of God, when he (13, 17 sqq.) says, 'Zeus, indeed, watches over all things, and nothing is hidden from him, but he is not aroused to anger by individual acts as mortals are; when crime has accumulated, punishment breaks in like the tempest which sweeps the clouds from the sky, and so, sooner or later, retribution overtakes everyone.' Here the influence of moral reflection reacting upon the notion of Deity cannot be mistaken.[2] We see the same reflection in Theognis with a different result; for the thought of the gods' power and knowledge leads him to doubt their justice. 'The thoughts of men,' he says, 'are vain (v. 141, 402); the gods bring to pass all things as seemeth them good, and vain are all a man's efforts if the dæmon has destined him to adversity. The gods know the mind and deeds of the just and of the unjust' (v. 887). This consideration is sometimes connected (as in v. 445, 591, 1029 sqq.) with exhortations to resignation, but in other places the poet irreverently accuses Zeus of treating good and evil alike, of loading sinners with wealth, of condemning the righteous to poverty, and of visiting the sins of fathers on their innocent children.[1] If we may suppose such reflections to have been at all frequent in those times, we can the more easily understand that some of the ancient philosophers should contemporaneously have opposed to the anthropomorphic notions of polytheism an essentially different conception of God. This conception, indeed, could only have come from Philosophy; unphilosophic reflection did no more than prepare the way for it, without actually quitting the soil of the popular faith.

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[1] A later contemporary of Archilochus, about 680 B.C.

[2] That the Divine retribution is often long withheld is a thought which we continually meet with, even as early as Homer (*Il.* iv. 160, and other passages), but the express antithesis of Divine retributive justice, and of human passion, shows a purer conception of Deity.

The same may be said of anthropology. The history of this order of ideas is completely bound up with the theories about death and a future state. The discrimination of soul and body originates in the sensuous man from his experience of their actual separation, from beholding the corpse out of which the animating breath has departed. Therefore the notion of the soul at first contains nothing but what may be immediately derived from that experience. The soul is represented as an essence of the nature of breath or air; as corporeal (for it dwells in the body and quits it at death in the manner of something extended[1]), but without the completeness and power of the living man. In regard to the soul after its separation from the body and departure to the other world, we know from the Homeric representations what was thought on the subject;[2] the substance of the man is his body;[3] the bodiless souls in Hades are like shadows and shapes of mist, or like forms which appear in dreams to the living, but cannot be grasped; vital power, speech, and memory have deserted them;[4] the sacrificial blood of offerings restores their speech and consciousness, but only for a little time. A few favoured ones, indeed, enjoy a happier fate;[5] while the saying of Achilles that the life of the poorest labourer is better than dominion over shadows, applies to all the rest. But as this privilege is limited to solitary cases, and is connected not with moral worth, but with some arbitrary favour of the gods, we can hardly seek in it the idea of future retribution. This idea comes out, it is true, more strongly in Homer, when he speaks of the punishments undergone by souls after death; but here again only marked and exceptional offences against the gods[1] incur these extraordinary penalties, which, therefore, have rather the character of personal revenge; and the future state generally, so far as any part of it, either for good or for evil, goes beyond an indistinct and shadowy existence, is determined far more by the favour or disfavour of the gods than by the merits of mankind.

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[1] V. 373.

Ζεῦ φίλε, θαυμάζω σε· σὺ γὰρ πάντεσσιν ἀνάσσεις . . .
ἀνθρώπων δ' εὖ οἶσθα νόον καὶ θυμὸν ἑκάστου . . .
πῶς δή σευ, Κρονίδη, τολμᾷ νόος ἄνδρας ἀλιτροὺς
ἐν ταὐτῇ μοίρᾳ τόν τε δίκαιον ἔχειν;
etc.

similarly 731 sqq., where the question is likewise asked:

καὶ τοῦτ' ἀθανάτων βασιλεῦ, πῶς ἐστὶ δίκαιον κ.τ.λ.

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[1] The soul of a murdered person, for instance, escapes through the wound. Cf. *Il.* xvi. 505, 856; xxii. 362, and many other passages in Homer.

[2] *Od.* x. 490 sqq.; xi. 34 sqq. 151 sqq. 215 sqq. 386 sqq.; 466 sqq.; xxiv. *sub init.*; *Il.* i. 3; xxiii. 69 sqq.

[3] The *αὐτὸς* in opposition to the *ψυχὴ*, *Il.* i. 4.

[4] This is the usual description, with which *Od.* xi. 540 sqq. 567 sqq. is certainly at variance.

[5] e.g. Tiresias, who by the favour of Persephone retained his consciousness in Hades; the Tyndaridæ, who alternately lived above and beneath the earth (*Od.* xi. 297 sqq.); Menelaus and Rhadamanthus, who, the one as the son-in-law, the other as the son of Zeus, were taken to Elysium instead of dying. (*Od.* iv. 561 sqq.) The strange statement that Hercules was himself in Olympus, while his shadow remained in Hades (*Od.* xi. 600)—a notion in which later allegorists have sought so many profound meanings—is to be explained simply from the fact that vv. 601–603 are an interpolation of a later period, when the hero had been deified, and it was therefore impossible to think of him as any longer in Hades

A more important conception of the future life might be found in the honours accorded to the dead, and the idea of universal moral retribution. From the former sprang the belief in dæmons, which we first meet with in Hesiod.[2] This origin of dæmons is shown, not only by the hero-worship which afterwards sprang up, but by the passage in Hesiod[3] which says that the great chiefs of the heroic times were taken after their death to the Islands of the Blest. The theory of opposite states, not merely for individuals, but for all the dead, is contained in the doctrine we lately considered of the mystic theologians, that in Hades the consecrated ones live with the gods, the unconsecrated are plunged in night and a miry swamp. But this notion must have acquired a moral significance later on; at first, even when it was not so crudely apprehended, it was still only a means of recommending the initiatory rites through the motives of hope and fear. Transmigration[1] took its rise more directly from ethical considerations; here it is precisely the thought of moral retribution which connects the present life of man with his previous and future life. It appears, however, that this doctrine in early times was confined to a somewhat narrow sphere, and became more widely diffused first through the Pythagoreans and then through Plato. Even the more general thought on which it is founded, the ethical conception of the other world as a state of universal retribution, seems to have been slow to receive recognition. Pindar, indeed, presupposes this conception,[2] and in after writers, as in Plato,[3] it appears as an ancient tradition already set aside by the enlightenment of their time. In the Lyric poets, on the other hand, we find, when they speak of the life beyond, that they still keep in all essential respects to the Homeric representations. Not only does Anacreon recoil with horror from the terrible pit of Hades (Fr. 43), but Tyrtæus too (9, 3) has no other immortality to set before the brave than that of posthumous fame; Erinna (Fr. 1) says the glory of great deeds is silent with the dead; and Theognis (567 sqq. 973 sqq.) encourages himself in the enjoyment of life by the reflection that after death he will lie dumb, like a stone, and that in Hades there is an end of all life's pleasures. There is no evidence in any Greek poet before Pindar, of the hope of a future life.

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[1] The Odyssey, xi. 575 sqq., relates the punishment of Tityus, Sisyphus and Tantalus; and in *Il.* iii. 278, perjured persons are threatened with punishment hereafter.

[2] Ἔργα καὶ ἡμέραι, 120 sqq. 139 sq. 250 sqq.

[3] *Loc. cit.* 165 sqq. Cf. Ibycus Fr. 33 (Achilles we read married Medea in Elysium). The same poet represents (Fr. 34) Diomede, like the Homeric Menelaus, as becoming immortal. Pindar, *Nem.* x. 7, says the same thing. Achilles is placed by Plato in the Islands of the Blest (*Symp.* 179 E; cf. Pindar, *Ol.* ii. 143); Achilles and Diomede likewise—vide the Scolion of Callistratus on Harmodius (*Bergk Lyr. gr.* 1020, 10, from Athen. xv. 695 B).

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[1] Vide *supra*, p. 67 sqq.

[2] Vide *supra*, p. 70, note 4.

[3] *Rep.* i. 330 D, ii. 363 C.

We find then, as the result of our enquiry up to this point, that in Greece, the path of philosophic reflection had been in many ways cleared and prepared, before the advent of Thales and Pythagoras, but that it had never been actually attempted. In the religion, civil institutions, and moral conditions of the Greeks, there was abundant material, and varied stimulus for scientific thought: reflection already began to appropriate this material; cosmogonic theories were propounded: human life was contemplated in its different aspects from the standpoint of religious faith, of morality, and of worldly prudence. Many rules of action were set up, and in all these ways the keen observation, open mind and clear judgment of the Hellenic race asserted and formed themselves. But there was as yet no attempt to reduce phenomena to their ultimate ground, or to explain them naturally from a uniform point of view from the same general causes. The formation of the world appears in the cosmogonic poems as a fortuitous event, subject to no law of nature; and if ethical reflection pays more attention to the natural connection of causes and effects, on the other hand it confines itself far more than cosmology within the limits of the particular. Philosophy learned indeed much from these predecessors, in regard both to its form and matter; but Philosophy did not itself exist until the moment when the question was propounded concerning the natural causes of things.

CHAPTER III.

ON THE CHARACTER OF GREEK PHILOSOPHY.

IN seeking to determine the common characteristic which distinguishes a long series of historical phenomena from other series, we are at once encountered by this difficulty:—that in the course of the historical development all particular traits alter, and that consequently it appears impossible to find any single feature which shall belong to every member of the whole that we want to describe. Such is the case in regard to Greek Philosophy. Whether we fix our attention on the object, method or results of Philosophy, the Greek systems display such important differences among themselves, and such numerous points of contact with other systems, that, as it would seem, we cannot rest upon any one characteristic as satisfactory for our purpose. The *object* of Philosophy is in all ages the same—Reality as a whole; but this object may be approached from various sides and treated with more or less comprehensiveness; and the Greek philosophers differ in this respect so greatly among themselves, that we cannot say wherein consists their common difference from others. In like manner, the *form* and *method* of scientific procedure have so often altered both in Greek and other philosophies, that it seems hardly possible to borrow any characteristic distinction from thence. I cannot, at any rate, agree with Fries[1] in his assertion that ancient Philosophy proceeds epagogically, and modern epistematically; that the one advances from facts to abstractions, from the particular to the universal, the other from the universal, from principles, to the particular. For among the ancient philosophers, we find the pre-Socratics employing almost exclusively a dogmatic, constructive method; and the same may be said of the Stoics, Epicureans, and, more especially, of the Neo-Platonists. Even Plato and Aristotle so little confine themselves to mere induction that they make science, in the strict sense of the word, begin with the derivation of the conditioned from first principles. On the other hand, among the moderns, the whole of the large and influential empirical school declares the epagogic method alone to be legitimate; while most of the other schools unite induction with construction. This distinction, therefore, cannot be carried out. Nor can we assent to the observation of Schleiermacher,[2] that the intimate relation persistently maintained between poetry and philosophy is characteristic of Hellenic, as compared with Indian Philosophy, where the two elements are so blended as to be indistinguishable from each other, and with the Philosophy of northern nations, where they never entirely coincide; and that as soon as the mythologic form loses itself, with Aristotle, the higher character of Greek science is likewise lost. The last assertion is indeed untrue, for it was Aristotle who conceived the problem of science most clearly and definitely; and of the other philosophers, not a few were quite independent of the mythological tradition—for example, the Ionian physicists, the Eleatics, Atomists, and Sophists, Socrates and the Socratic Schools, Epicurus and his successors, the New Academy, and the Sceptics; others, with the freedom of a Plato, made use of mythology merely as an artistic ornament, or sought, like the Stoics and Plotinus, to support it by a philosophic interpretation, without allowing their philosophic system to be conditioned by it. On the other hand, Christian Philosophy was always dependent on positive religion. In the Middle Ages, this dependence was far greater than the dependence of Philosophy upon religion in Greece, and in modern times it has certainly been no less great. It may be urged that the Christian religion has a different origin and a different content; but this is a secondary consideration in regard to the general attitude of Philosophy to Religion. In both cases, unscientific notions are presupposed by thought without any previous demonstration of their truth. But, in fact, no such decisive contrast in scientific procedure is anywhere discoverable as would justify us in ascribing one definite method, universally and exclusively, to Greek, and another to modern Philosophy. As little do the *results* on each side bear out such a distinction. We find among the Greeks, Hylozoistic and Atomistic systems, and these are also to be found among the moderns; in Plato and Aristotle we see a dualistic idealism opposed to materialism, and it is this view of the world which has become predominant in Christendom; we see the sensualism of the Stoics and Epicureans reproduced in English and French empiricism; and the scepticism of the New Academy in Hume; the pantheism of the Eleatics and Stoics may be compared with the doctrine of Spinoza; the Neo-Platonic spiritualism with Christian mysticism and Schelling's theory of identity; in many respects also with the idealism of Leibnitz: even in Kant and Jacobi, in Fichte and Hegel, many analogies with Greek doctrines can be shown; and in the ethics of the Christian period there are few propositions which have not parallels in the sphere of Greek Philosophy. Supposing, however, that in all cases parallels were not forthcoming, still the features peculiar on the one hand to Greek, and on the other to modern Philosophy, could only be regarded as generally distinctive of each, if they existed in all the Greek systems, and were absent from all the modern. And of how many characteristics could this be asserted? Here again, therefore, we have failed to discover any true mark of distinction.

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[1] *Geschichte der Phil.* i. 49 sqq.

[2] *Ibid.* p. 18.

Nevertheless, an unmistakable family likeness binds together the remotest branches of Greek science. But as the countenances of men and women, old people and children, often resemble one another, though their individual features are not alike, so is it with the spiritual affinity of phenomena that are connected historically. It is not this or that particular characteristic which is the same; the similarity lies in the expression of the whole, in the formation of corresponding parts after the same model, and their combination in an analogous relation; or if this is no longer the case, in our being able to connect the later phase with the earlier, as its natural consequence, according to the law of a continuous development. Thus the aspect of Greek Philosophy altered considerably in the lapse of years; yet the features which subsequently showed themselves were already present in its earliest shape; and however strange its appearance in the last centuries of its historical existence, closer observation will show that the original forms are even then discernible, although time-worn and decomposed. We must not, indeed, expect to find any particular quality unaltered throughout its whole course, or equally present in each of the systems; the general character of Greek Philosophy will have been rightly determined if we succeed in indicating the primitive type, in reference to which the different systems, in their various declensions from it, are intelligible.

If, for this purpose, we compare Greek Philosophy with the corresponding productions of other nations, what first strikes us is its marked difference from the more ancient Oriental speculation. That speculation, the concern almost solely of the priests, had wholly developed itself from religion, on which its direction and content constantly depended; it never, therefore, attained a strictly scientific form and method, but remained partly in the shape of an external, grammatical, and logical schematism, partly in that of aphoristic prescripts and reflections, and partly in that of imaginative and poetical description. The Greeks were the first who gained sufficient freedom of thought to seek for the truth respecting the nature of things, not in religious tradition, but in the things themselves; among them first a strictly scientific method, a knowledge that follows no laws except its own, became possible. This *formal* character at once completely distinguishes Greek Philosophy from the systems and researches of the Orientals; and it is scarcely necessary to speak of the *material* opposition presented by the two methods of conceiving the world. The Oriental, in regard to nature, is not free, and has consequently been able neither to explain phenomena logically from their natural causes, nor to attain liberty in civil life, nor purely human culture. The Greek, on the contrary, by virtue of his liberty, can perceive in nature a regular order, and in human life can strive to produce a morality at once free and beautiful.

The same characteristics distinguish Greek Philosophy from that of the Christians and Mohammedans in the Middle Ages. Here, again, we find no free enquiry: science is fettered by a double authority—by the theological authority of positive religion, and by the philosophical authority of ancient authors who had been the instructors of the Arabians and of the Christian nations. This dependence upon authority would of itself have sufficed to cause a development of thought quite different from that of the Greeks, even had the dogmatic content of Christianity and Mohammedanism borne greater resemblance to the Hellenic doctrines than was the case. But what a gulf is there between Greek and Christian in the sense of the early and mediæval Church! While the Greek seeks the Divine primarily in nature, for the Christian, nature loses all worth and all right to existence in the thought of the omnipotence and infinity of the Creator; and nature cannot even be regarded as the pure revelation of this omnipotence, for it is distorted and ruined by sin. While the Greek, relying on his reason, seeks to know the laws of the universe, the Christian flees from the errors of reason, which to him is carnal, and darkened by sin, to a revelation the ways and mysteries of which he thinks himself all the more bound to reverence, the more they clash with reason and the natural course of things. While the Greek endeavours to attain in human life the fair harmony of spirit and nature, which is the distinctive characteristic of Hellenic morality; the ideal of the Christian lies in an asceticism which breaks off all alliance between reason and sense: instead of heroes, fighting and enjoying like men, he has saints displaying monkish apathy; instead of Gods full of sensual desires, sexless angels; instead of a Zeus who authorises and indulges in all earthly delights—a God who becomes man, in order by his death openly and practically to condemn them. So deeply rooted an opposition between the two theories of the world necessitated an equal contrast in the tendencies of Philosophy: the Philosophy of the Christian Middle Ages of course turned away from the world and human life, as that of the Greeks inclined to them. It was, therefore, quite logical and natural that the one Philosophy should neglect the investigations of nature which the other had commenced; that the one should work for heaven, the other for earth; the one for the Church, the other for the State; that the science of the Middle Ages should lead to faith in a divine revelation, and to the sanctity of the ascetic as its end, and Greek science to the understanding of nature's laws, and to the virtue which consists in the conformity of human life to nature; that, in short, there should exist between the two Philosophies a radical opposition coming to light even when they apparently harmonise, and giving an essentially different meaning to the very words of the ancients in the mouths of their Christian successors. Even the Mohammedan view of the world is in one respect nearer to the Greek than the Christian is, for in the moral sphere it does not assume so hostile an attitude to man's sensuous life. The Mohammedan philosophers of the Middle Ages bestowed also greater attention on natural research, and restricted themselves less exclusively to theological and theologico-metaphysical questions than the Christians. But the Mohammedan nations were wanting in that rare genius for the intellectual treatment and moral ennobling of natural instincts by which the Greek was so favourably distinguished from the Oriental, who was careless of form, and carried both self-indulgence and self-mortification to excess. The abstract monotheism, too, of the Koran is even more directly opposed to the deified world of the Greeks than the Christian doctrine is. The Mohammedan Philosophy, therefore, in regard to its general tendency, must, like the Christian, be pronounced essentially different from the Greek. In it we miss the free outlook upon the actual world, and therewith the activity and independence of thought, so natural to the Greeks; and though it starts from a zealous desire for the knowledge of nature, the theological presuppositions of its dogmatic creed, and the magical conceptions of the latest antiquity, are always in the way. Lastly, the ultimate aim which it proposes to itself consists far more in the consummation of the religious life and the attainment of mystic abstraction and supernatural illumination, than in the clear and scientific understanding of the world and its phenomena.

On these points, however, there can be little controversy. It is a far more difficult task to determine the specific character of Greek Philosophy as distinguished from the modern. For modern Philosophy itself arose essentially under Greek influence, and by means of a partial return to Greek intuitions; it is, therefore, in its whole spirit, far more allied to Hellenic Philosophy than the Philosophy of the Middle Ages, in spite of its dependence on Greek authorities, ever was. This similarity is heightened, and the difficulty of differentiating them increased, by the fact that the old Philosophy, in the course of its own development, approximated to the Christian conception of the world (with which it has been blended in modern science) and paved the way for that conception. The doctrines which were the preparation for Christianity are often very like Christian doctrine modified by classical studies; the original Greek doctrines resemble in many respects the modern doctrines which subsequently developed themselves under the influence of the ancients; so that it seems hardly possible to assign distinctive characteristics that are generally applicable. But there appears at the outset this fundamental difference between the two Philosophies—viz. that the one is the earlier, the other the later; the one is original, the other derived. Greek Philosophy sprang from the soil of Greek national life and of the

Greek view of the world; even when it passes beyond the original limits of the Hellenic sphere and prepares the transition from the ancient period to the Christian, its essential content can only be understood in relation to the development of the Greek spirit. Even at that period we feel that it is the abiding influence of classic ideas which hinders it from really adopting the later standpoint. Conversely, with the modern philosophers, even when at first sight they seem wholly to return to the ancient modes of thought, we can always, on closer inspection, detect motives and conceptions foreign to the ancients. The only question is, therefore, where these motives and conceptions are ultimately to be sought?

All human culture results from the reciprocal action of the inward and the outward, of spontaneity and receptivity, of mind and nature; its direction is, therefore, principally determined by the relation that exists between these two sides, which relation, as we have already seen, was always more harmonious in the Greek race than in any other, by reason of its peculiar character and historical conditions. The distinctive peculiarity of the Greeks lies, indeed, in this unbroken unity of the spiritual and the natural, which is at once the prerogative and the confining barrier of this classical nation. Not that spirit and nature were as yet wholly undiscriminated. On the contrary, the great superiority of Greek civilisation, as compared with earlier or contemporary civilisations, essentially depends on this fact —that in the light of the Hellenic consciousness there disappears, not only the irrational disorder of primitive and natural life, but also that fantastic confusion and interminglement of the ethical with the physical, which we almost everywhere meet with in the East. The Greek attains his independence of the powers of nature by the free exercise of his mental and moral activity; transcending merely natural ends, he regards the sensible as an instrument and symbol of the spiritual. Thus the two spheres are to him separate; and as the ancient gods of nature were overpowered by the Olympian deities, so his own natural state gives place to the higher state of a moral culture that is free, human, and beautiful. But this discrimination of spirit and nature does not as yet involve the theory of radical opposition and contradiction—the systematic breach between them which was preparing in the last centuries of the ancient world, and has been so fully accomplished in the Christian world. The spirit is always regarded as the higher element in comparison with nature; man looks upon his free moral activity as the essential aim and content of his existence; he is not satisfied to enjoy in a sensuous manner, or to work in servile dependence on the will of another; what he does he will do freely, for himself; the happiness which he strives for he will attain by the use and development of his bodily and mental powers, by a vigorous social life, by doing his share of work for the whole, by the respect of his fellow citizens; and on this personal capability and freedom is founded that proud self-confidence which raises the Hellene so far above all the barbarians. The reason that Greek life has not only a more beautiful form, but also a higher content than that of any other ancient race, is because no other was able to rise with such freedom above mere nature, or with such idealism to make sensible existence simply the sustainer of spiritual. If then this unity of spirit with nature were understood as a unity without difference, the expression would ill serve to characterise it. Rightly apprehended, on the other hand, it correctly expresses the distinction of the Greek world from the Christian Middle Ages and from modern times. The Greek rises above the world of outward existence and absolute dependence on the forces of nature, but he does not on that account hold nature to be either impure or not divine. On the contrary, he sees in it the direct manifestation of higher powers; his very gods are not merely moral beings, they are at the same time, and originally, powers of nature; they have the form of natural existence, they constitute a plurality of beings, created, and like unto men, restricted in their power of action, having the universal force of nature as eternal chaos before them, and as pitiless fate above them; far from denying himself and his nature for the sake of the gods, the Greek knows no better way of honouring them than by the cheerful enjoyment of life, and the worthy exercise of the talents he has acquired in the development of his natural powers of body and mind. Accordingly moral life also is throughout founded upon natural temperament and circumstances. From the standpoint of ancient Greece it is impossible that man should consider his nature corrupt, and himself, as originally constituted, sinful. There is, consequently, no demand that he should renounce his natural inclinations, repress his sensuality, and be radically changed by a moral new birth; no demand even for that struggle against sensuality which our moral law is accustomed to prescribe even when it is no longer based upon positive Christianity. On the contrary, the natural powers as such are assumed to be good, and the natural inclinations as such to be legitimate; morality consists, according to the truly Greek conception of Aristotle, in guiding these powers to the right end, and maintaining these inclinations in right measure and balance: virtue is nothing more than the intelligent and energetic development of natural endowments, and the highest law of morals is to follow the course of nature freely and rationally. This standpoint is not a result of reflection, it is not attained by a struggle with the opposite demand for the renunciation of nature, as is the case with the moderns when they profess the same principles; it is, therefore, quite untrammelled by doubt and uncertainty. To the Greek it appears as natural and necessary that he should allow sensuality its rights as that he should control it by the exercise of will and reflection; he can regard the matter in no other light, and he therefore pursues his course with full security, honestly feeling that he is justified in so doing. But among the natural presuppositions of free activity must also be reckoned the social relations in which each individual is placed by his birth. The Greek allows these relations an amount of influence over his morality, to which in modern times we are not accustomed. The tradition of his people is to him the highest moral authority, life in and for the state the highest duty, far outweighing all others; beyond the limits of the national and political community, moral obligation is but imperfectly recognised; the validity of a free vocation determined by personal conviction, the idea of the rights and duties of man in the wider sense, were not generally acknowledged until the transitional period which coincides with the dissolution of the ancient Greek standpoint. How far the classical epoch and view of human life are in this respect removed from ours, appears in the constant confusion of morals with politics, in the inferior position of women, especially among the Ionian races, in the conception of marriage and sexual relations, but above all in the abrupt opposition between Greeks and barbarians, and the slavery which was connected with it, and was so indispensable an institution in ancient states. These shadow-sides of Greek life must not be overlooked. In one respect, however, things were easier for the Greek than for us. His range of vision, it is true, was more limited, his relations were narrower, his moral principles were less pure and strict and universal than ours; but, perhaps, on that very account, his life was the more fitted to form complete, harmoniously cultured men and classical characters.[1]

The classic form of Greek art was also essentially conditioned by the mental character we have been describing. The classic ideal, as Vischer[2] well remarks, is the ideal of a people that is moral without any break with nature: there is consequently in the spiritual content of its ideal, and therefore in the expression of that ideal, no surplus which cannot be unrestrainedly poured forth in the form as a whole. The spiritual is not apprehended as opposed to the sensible phenomenon, but in and with it; consequently, the spiritual attains to artistic representation only so far as it is capable of direct expression in the sensible form. A Greek work of art bears the character of simple, satisfied beauty, of plastic calm; the idea realises itself in the phenomenon, as the soul in the body with which it clothes itself by virtue of its creating force; there is as yet no spiritual content which resists this plastic treatment, and which could not find its adequate and direct representation in the sensible form. Greek art consequently only attained to perfection where, from the nature of the subject, no task was proposed to it which could not be completely accomplished in the way we have just described. In plastic art, in the epic, in classic architecture, the Greeks have remained unrivalled models for all time; on the other hand, in music they seem to have been far behind the moderns; because this art, more than any other, by its very nature leads us back from the fugitive external elements of tone to the inner region of feeling and of subjective mood. For the same reasons their painting seems only to have been comparable with that of the moderns in respect of drawing. Even Greek lyric poetry, great and perfect as it is of its kind, differs no less from the more emotional and subjective modern lyric poetry than the metrical verse of the ancients from the rhymed verse of the moderns; and if, on the one hand, no later poet could have written a Sophoclean drama, on the other, the ancient tragedies of fate as compared with modern tragedies since Shakespeare, fail in the natural evolution of events from the characters, from the temperament of the *dramatis personæ*; and thus, like lyric poetry, instead of fully developing its own particular form of art, tragedy has still in a certain sense the epic type. In all these traits one and the same character is manifested: Greek art is distinguished from modern by its pure objectivity; the artist in his creation does not remain within himself, in the inner region of his thoughts and feelings, and his work when accomplished suggests nothing internal which it has not fully expressed. The form is as yet absolutely filled with the content; the content in its whole compass attains determinate existence in the form; spirit is still in undisturbed union with nature, the idea is not yet separated from the phenomenon.

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[1] Cf. Hegel's *Phil. der Gesch.* p. 291 sq. 297 sqq. 305 sqq.; *Æsthetik*, ii. 56 sqq. 73 sqq. 100 sqq.; *Gesch. der Phil.* i. 170 sq.; *Phil. der Rel.* ii. 99 sqq.; Braniss, *Gesch. der Phil. s. Kant*, i. 79 sqq.; and especially the thoughtful and forcible remarks of Vischer in his *Æsthetik*, ii. 237 sqq. 446 sqq.

[2] *Æsth.* ii. 459.

We must expect to find the same character in Greek Philosophy, since it is the spirit of the Hellenic people that created that Philosophy, and the Hellenic view of the world that there receives its scientific expression. This character first shows itself in a trait which indeed is not easy to define in an exhaustive and accurate manner, but which must strike every student in the writings and fragments of ancient Philosophy: in the whole mode of treatment, the whole attitude which the author adopts in reference to his subject. That freedom and simplicity, which Hegel praises [1] in the ancient philosophers, that plastic repose with which a Parmenides, a

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[1] *Gesch. der Phil.* i. 124.

Plato, an Aristotle handle the most difficult questions, is the same in the sphere of scientific thought as that which in the sphere of art we call the classic style. The philosopher does not in the first place reflect upon himself and his personal condition: he has not to deal with a number of preliminary presuppositions and make abstraction of his own thoughts and interests that he may attain to a purely philosophic mood; he is in such a mood from the very beginning. In the treatment, therefore, of scientific questions he does not allow himself to be disturbed by other opinions, nor by his own wishes; he goes straight to the matter in hand, desiring to absorb himself in it, to give free scope to its working within him; he is at peace as to the results of his thought, because ready to accept whatever approves itself to him as true and real.[1] This objectivity was no doubt far more easily attainable for Greek Philosophy than for our own; thought, having then before it neither a previous scientific development nor a fixed religious system, could grapple with scientific problems from their very commencement with complete freedom. Such objectivity, furthermore, constitutes not only the strength, but also the weakness of this Philosophy; for it is essentially conditional on man's having not yet become mistrustful of his thought, on his being but partially conscious of the subjective activity through which his presentations are formed, and therefore of the share which this activity has in their content; in a word, on his not having arrived at self-criticism. The difference, however, between ancient Philosophy and modern is here strikingly and unquestionably displayed.

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[1] Take, for example, the well-known utterances of the Protagoras: 'Man is the measure of all things, of Being how it is, of non-Being how it is not.' 'Of the gods I have nothing to say; neither that they are, nor that they are not; for there is much that hinders me,—the obscurity of the matter and the shortness of human life.' These propositions were in the highest degree offensive at that period; there was in them a demand for a complete revolution of all hitherto received ideas. Yet how statuesque is the style! With what classical calmness are they enunciated!

This characteristic suggests further points for reflection. So simple a relation to its object was only possible to Greek thought, because, as compared with modern thought, it started from a much more incomplete experience, a more limited knowledge of nature, a less active development of inner life. The greater the mass of facts with which we are acquainted, the more complicated are the problems which have to be solved in attempting their scientific explanation. The more accurately, on the one hand, we have come to investigate external events in their specific character; the more, on the other, has our inner eye become keen for introspection, through the intensifying of religious and moral life; the more our historical knowledge of human conditions widens, the less possible is it to apply the analogies of human spiritual life to natural phenomena, and the analogies of the external world to the phenomena of consciousness; to rest satisfied with imperfect explanations abstracted from limited and one-sided experience, or to presuppose the truth of our conceptions without accurate enquiry. It naturally followed, therefore, that the problems with which all Philosophy is concerned should in modern times partially change their scope and significance. Modern Philosophy begins with doubt; in Bacon, with doubt of the previous science;

in Descartes, with doubt of the truth of our conceptions generally—absolute doubt. Having this starting-point, it is forced from the outset to keep steadily in view the question of the possibility and conditions of knowledge, and for the answering of that question it institutes all those enquiries into the origin of our conceptions, which at each new turn that they have taken have gained in profundity, in importance, and in extent. These enquiries were at first remote from Greek science, which, firmly believing in the veracity of thought, applied itself directly to the search for the Real. But even after that faith had been shaken by Sophistic, and the necessity of a methodical enquiry had been asserted by Socrates, this enquiry is still far from being the accurate analysis of the intellect undertaken by modern Philosophy since Locke and Hume. Aristotle himself, though he describes how conceptions result from experience, investigates very incompletely the conditions on which the correctness of our conceptions depends; and the necessity of a discrimination between their objective and subjective constituents never seems to occur to him. Even the scepticism posterior to Aristotle gave no impulse to any more fundamental and theoretic investigations. The empiricism of the Stoics and the sensualism of the Epicureans were based as little as the neo-Platonic and neo-Pythagorean speculation on enquiries tending to supply the lacunæ in the Aristotelian theory of knowledge. The criticism of the faculty of cognition, which has attained so great an importance for modern Philosophy, in ancient Philosophy was proportionally undeveloped. Where, however, a clear recognition is wanting of the conditions under which scientific enquiry must be undertaken, there science must necessarily itself be wanting in that certainty of procedure which due regard to those conditions alone can give. Thus we find that the Greek philosophers, even the greatest and most careful observers among them, have all more or less the failing with which philosophers have been so often reproached. They are apt to cease their enquiries prematurely, and to found general concepts and principles upon imperfect or insufficiently proved experiences, which are then treated as indisputable truths and made the basis of farther inferences; to display, in short, that dialectical exclusiveness which is the result of employing certain presentations universally assumed, established by language, and recommending themselves by their apparent accordance with nature, without further enquiring into their origin and legitimacy, or keeping in view while so employing them their real foundation in fact. Modern Philosophy has itself been sufficiently faulty in this respect; it is humiliating to compare the speculative rashness of many a later philosopher with the circumspection displayed by Aristotle in testing the theories of others, and in examining the various points of view that arise out of the questions he is discussing. But in the general course of modern science the demand for a strict and exact method has more and more made itself felt, and even where the philosophers themselves have not adequately responded to this demand, the other sciences have afforded them a far greater mass of facts and laws empirically established; and further, these facts have been much more carefully sifted and tested, and these laws much more accurately determined, than was possible at the period of ancient Philosophy. This higher development of the experimental sciences, which distinguishes modern times from antiquity, is closely connected with that critical method in which Greek Philosophy and Greek science generally were so greatly deficient.

The distinction of subjective and objective in our conceptions is nearly allied to the distinction of the intellectual and corporeal, of phenomena within us and phenomena without. This distinction, like the other, is generally wanting in clearness and precision with the ancient philosophers. Anaxagoras, it is true, represents spirit as opposed to the material world; and in the Platonic School this opposition is developed to its fullest extent. Nevertheless, in Greek Philosophy, the two spheres are constantly overlapping one another. On the one hand, natural phenomena, which theology had considered to be immediately derived from beings akin to men, continued to be explained by analogies derived from human life. On such an analogy were based not only the Hylozoism of many ancient physicists, and that belief in the animate nature of the world which we find in Plato, the Stoics and neo-Platonists, but also the teleology which, in most of the philosophic schools since Socrates, has interfered with, and not unfrequently overpowered, the physical explanation of nature. On the other hand, the true essence of psychic phenomena was also not determined with accuracy; and if only a certain number of the ancient philosophers contented themselves with such simple materialistic explanations as were set up by many of the pre-Socratic physicists, after them by the Stoics and Epicureans, and also by individual Peripatetics; yet even in the spiritualistic psychology of a Plato, an Aristotle, or a Plotinus we are surprised to find that the difference between conscious and unconscious forces is almost ignored, and that hardly any attempt is made to conceive the different sides of human nature in their personal unity. Hence it was easy to these philosophers to explain the soul as compounded of distinct and radically heterogeneous elements; and hence, too, in their conceptions relating to God, the world-soul, the spirits of the stars, and similar subjects, the question of the personality of these beings is generally so little considered. It was in the Christian period that the feeling of the validity and importance of human personality first attained its complete development; and so it is in modern science that we first find on this point conceptions sufficiently precise to render the confusion of personal and impersonal characteristics so frequently met with in ancient philosophy henceforward impossible.

The difference between Greek ethics and our own has been already touched upon; and it need scarcely be said that all our previous remarks on this subject equally apply to philosophic ethics. Much as Philosophy itself contributed to transform the old Greek conception of moral life into a stricter, more abstract, more general morality, the characteristic features of the ancient view were in Philosophy only gradually effaced, and were always more or less present down to the latest period of antiquity. Not until after Aristotle was the close union of morals with politics, so inherent in the Greeks, dissolved; and down to the time of Plotinus, we can still clearly recognise the æsthetic treatment of ethics, which was also essentially distinctive of the Hellenic spirit.

The spiritual life of the Greeks in the thousand years that elapsed between the rise and close of their Philosophy certainly underwent great and important changes, and Philosophy was itself one of the most efficient causes by which these changes were brought about. As Greek Philosophy represents generally the character of the Greek spirit, it must also reflect the transformations which in course of time that spirit has undergone; and the more so, because the greater number and the most influential of the philosophic systems belong to the period when the older form of Greek spiritual life was gradually melting away; when the human mind was increasingly withdrawing itself from the outer world, to be concentrated with exclusive energy upon itself—and when the transition from the classic to the Christian and modern world was in part preparing, and in part already accomplished. For this reason, the characteristics which appeared in the philosophy of the classical period cannot be unconditionally ascribed to the whole of Greek Philosophy; yet the early character of that Philosophy essentially influenced its entire subsequent course. We see, indeed, in the whole of its development, the original unity of spirit with nature gradually disappearing; but as long as we continue on Hellenic ground, we never find the abrupt separation between them, which was the starting-point of modern science.

In the commencement of Greek Philosophy, it is before all things the external world which claims attention. The question arises as to its causes; and the answer is attempted without any preliminary enquiry into the human faculty of cognition; the reasons of phenomena are sought in what is known to us through the external perception, or is at any rate analogous to it. But, on the other hand, just because as yet no exact discrimination is made between the external world and the world of consciousness, qualities are ascribed to corporeal forms and substances, and effects are expected from them, which could only in truth belong to spiritual beings. Such are the characteristics of Greek Philosophy up to the time of Anaxagoras. During this period, philosophic interest chiefly confines itself to the consideration of nature, and to conjectures respecting the reasons of natural phenomena; the facts of consciousness are not yet recognised or investigated as special phenomena.

This Philosophy of nature was opposed by Sophistic, which denied man's capacity for the cognition of things, and directed his attention instead to his own practical aims. But with the advent of Socrates, Philosophy again inclined towards a search for the Real, though at first this was not formulated into a system. The lesser Socratic schools, indeed, contented themselves with the application of knowledge to some one side of man's spiritual life, but Philosophy as a whole, far from maintaining this subjective view of the Socratic principle, culminated in the vast and comprehensive systems of Plato and Aristotle, the greatest achievements of Greek science. These systems approximate much more closely to modern Philosophy, on which they have had an important influence, than the pre-Socratic physics. Nature is with them neither the sole nor the principal object of enquiry; side by side with physics, metaphysics has a higher, and ethics an equal prominence, and the whole is placed on a firmer basis by the enquiries concerning the origin of knowledge and the conditions of scientific method. Moreover, the unsensuous form is distinguished from the sensible phenomenon, as the essential from the accidental, the eternal from the transitory; only in the cognition of this unsensuous essence—only in pure thought—is the highest and purest knowledge to be sought. Even in the explanation of nature, preference is given to the investigation of forms and aims as compared with the knowledge of physical causes; in man, the higher part of his nature in its essence and origin is discriminated from the sensual part; and the highest problem for mankind is accordingly found exclusively in the development of his spiritual life, and above all of his knowledge. Although, however, the Platonic and Aristotelian systems show themselves thus akin in many respects to modern systems, yet the peculiar stamp of the Greek spirit is unmistakably impressed on them both. Plato is an idealist, but his idealism is not the modern subjective idealism: he does not hold with Fichte, that the objective world is a mere phenomenon of consciousness; he does not, with Leibniz, place percipient essences at the origin of all things; the ideas themselves are not derived by him from thought, either human or divine, but thought is derived from participation in the ideas. In the ideas the universal essence of things is reduced to plastic forms, which are the object of an intellectual intuition, in the same way that things are the object of the sensuous intuition. Even the Platonic theory of knowledge has not the character of the corresponding enquiries of the moderns. With them, the main point is the analysis of the subjective activity of cognition; their attention is primarily directed to the development of knowledge in man according to its psychological course and its conditions. Plato, on the other hand, keeps almost exclusively to the objective nature of our presentations; he enquires far less about the manner in which intuitions and conceptions arise in us, than about the value attaching to them in themselves; the theory of knowledge is therefore with him directly connected with metaphysics: the enquiry as to the truth of the presentation or conception coincides with that respecting the reality of the sensible phenomenon and of the Idea. Plato, moreover, however low may be his estimation of the phenomenal world in comparison with the idea, is far removed from the prosaic and mechanical modern view of nature; the world is to him the visible god, the stars are living, happy beings, and his whole explanation of nature is dominated by the teleology which plays so important a part in Greek Philosophy posterior to Socrates. Though in his ethics he passes beyond the ancient Greek standpoint, by the demand for a philosophic virtue founded on science, and prepares the way for Christian morality by flight from the world of sense; yet in the doctrine of Eros he maintains the æsthetic, and in the institutions of his Republic the political character of Greek morality in the most decided manner; and despite his moral idealism, his ethics do not disclaim that inborn Hellenic sense of naturalness, proportion, and harmony which expresses itself in his successors by the principle of living according to nature, and the theory of goods and of virtue founded on that principle. The Greek type, however, comes out most clearly in Plato's mode of apprehending the whole problem of Philosophy. In his inability to separate science from morality and religion, in his conception of Philosophy as the complete and universal culture of mind and character, we clearly recognise the standpoint of the Greeks, who made far less distinction between the different spheres of life and culture than the moderns, because with them the fundamental opposition of spiritual and bodily perfection was much less developed and insisted on. Even in Aristotle this standpoint is clearly marked, although, in comparison with that of Plato, his system looks modern in respect of its purely scientific form, its rigorous conciseness, and its broad empirical basis. He, too, regards the conceptions in which thought sums up the qualities of things as objective forms antecedent to our thought; not indeed distinct from individual things as to their existence, but as to their essential nature, independent; and in determining the manner in which these forms are represented in things, he is guided throughout by the analogy of artistic creation. Although, therefore, he bestows much greater attention on physical phenomena and their causes than Plato does, his whole theory of the world bears essentially the same teleologic æsthetic character as Plato's. He removes the Divine spirit from all living contact with the world, but in his conception of nature as a uniform power working with full purpose and activity to an end, the poetic liveliness of the old Greek intuition of nature is apparent; and when he attributes to matter as such a desire for form, and deduces from that desire all motion and life in the corporeal world, we are reminded of the Hylozoism which was so closely related to the view of nature we are considering. His notions about the sky and the heavenly bodies which he shares with Plato and most of the ancients, are also entirely Greek. His ethics altogether belong to the sphere of Hellenic morality. Sensual instincts are recognised by him as a basis for moral action, virtue is the fulfilment of natural activities. The sphere of ethics is distinguished from that of politics, but the union between them is still very close. In politics itself we find all the distinctive features of the Hellenic theory of the state, with its advantages and imperfections: on the one hand, the doctrine of man's natural vocation for political community, of the moral object of the state, of the value of a free constitution; on the other hand, the justification of slavery and contempt for manual labour. Thus, while spirit is still closely united to its natural basis, nature is directly related to spiritual life. In Plato and Aristotle we see neither the abstract spiritualism, nor the purely physical explanation of nature of modern science; neither the strictness and universality of our moral consciousness, nor the acknowledgment of material interest which so often clashes with it. The oppositions between which human life and thought move are less developed, their relation is more genial and harmonious, their adjustment easier, though certainly more superficial, than in the modern theory of the world, originating as it does from far more comprehensive experiences, more difficult struggles, and more complex conditions.

Not until after the time of Aristotle does the Greek spirit begin to be so greatly estranged from nature that the classical view of the world disappears, and the way is being prepared for the Christian. How greatly this change in its consequences affected also the aspect of Philosophy, will hereafter be shown. In this period of transition, however, it is all the more striking to observe that the old Greek standpoint was still sufficiently influential to divide the Philosophy of that time very clearly from ours. Stoicism no longer carries on any independent investigation of nature; it withdraws itself entirely from objective enquiry and substitutes the interest of moral subjectivity. Yet it continues to look upon nature as the thing which is highest and most divine; it defends the old religion, inasmuch as it was a worship of the powers of nature; subjection to natural laws, life according to nature, is its watchword; natural truths (φυσικαὶ ἔννοιαι) are its supreme authority; and though, in this return to what is primitive and original, it concedes only a conditional value to civil institutions, yet it regards the mutual interdependence of all men, the extension of political community to the whole race, as an immediate requirement of human nature, in the same manner as the earlier Greeks regarded political life. While in Stoicism man breaks with the outer world in order to fortify himself in the energy of his inner life against external influences, he yet at the same time entirely rests upon the order of the universe, spirit feels still too much bound to nature to know that it is in its self-conciousness independent of nature. But nature, consequently, appears as if filled with spirit, and in this direction Stoicism goes so far that the distinction between spiritual and corporeal, which Plato and Aristotle so clearly recognised, again disappears, matter becomes directly animate, spirit is represented as a material breath, or as an organising fire; and, on the other hand, all human aims and thoughts are transferred to nature by the most external teleology possible.

In Epicureanism the specific character of the Greek genius is otherwise manifested. Hylozoism and teleology are now abandoned for an entirely mechanical explanation of nature; the vindication of popular religion is exchanged for an enlightened opposition to it, and the individual seeks his happiness, not in submission to the law of the whole, but in the undisturbed security of his individual life. But that which is according to nature is the highest, to the Epicurean as to the Stoic; and if in theory he degrades his external nature into a spiritless mechanism, so much the more does he endeavour to establish in human life that beautiful harmony of the egoistic and benevolent impulses, of sensuous enjoyment and spiritual activity, which made the garden of Epicurus the abode of Attic refinement and pleasant social intercourse. This form of culture is as yet without the polemical asperities which are inseparable from modern repetitions of it, on account of the contrast it presents to the strictness of Christian ethics; the justification of the sensual element appears as a natural presupposition which does not require any preliminary or particular apology. However much then Epicureanism may remind us of certain modern opinions, the difference between that which is original and of natural growth, and that which is derived and the result of reflection, is unmistakable on closer examination. The same may be said of the scepticism of this period as compared with that of modern times. Modern scepticism has always something unsatisfied about it, an inner uncertainty, a secret wish to believe that which it is trying to disprove. Ancient scepticism displays no such half-heartedness, and knows nothing of the hypochondriacal unrest which Hume himself[1] so vividly describes; it regards ignorance not as a misfortune, but as a natural necessity, in the recognition of which man becomes calm. Even while despairing of knowledge it maintains the attitude of compliance with the actual order of things, and from this very source evolves the *ἀταραξία* which is almost impossible to modern scepticism, governed as it is by subjective interests.[2]

Even neo-Platonism, far removed as it is from the ancient Greek spirit, and decidedly as it approaches that of the Middle Ages, has its centre of gravity still in the antique world. This is evident, not only from its close relation to the heathen religions, the last apologist for which it would certainly not have become had no essential and internal affinity existed between them, but also in its philosophic doctrines. Its abstract spiritualism contrasts, indeed, strongly with the naturalism of the ancients; but we have only to compare its conception of nature with that of contemporary Christian writers, we need only hear how warmly Plotinus defends the majesty of nature against the contempt of the Gnostics, how keenly Proclus and Simplicius dispute the Christian doctrine of the creation, in order to see in it an offshoot of the Greek spirit. Matter itself is brought nearer to mind by the neo-Platonists than by the majority of modern philosophers, who see in the two principles essentially separate substances; for the neo-Platonists opposed the theory of a self-dependent matter, and explained the corporeal as the result of the gradual degradation of the spiritual essence. They thus declared the opposition of the two principles to be not original and absolute, but derived and merely quantitative. Again, though the neo-Platonic metaphysics, especially in their later form, must appear to us very abstruse, their origin was similar to that of Plato's theory of Ideas; for the properties and causes of things are here regarded as absolute essential natures, over and above the world and man, as objects of an intellectual intuition. Moreover, these essences bear to each other a definite relation of higher, lower, and co-ordinate, and thus appear as the metaphysical counterpart of the mythical gods, whom neo-Platonic allegory itself recognised in them, recognising also in their progressive emanation from the primitive essence the analogue of those theogonies with which Greek speculation in the earliest times began.

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[1] On *Human Nature*, book i. part iv. section 1, 509 sqq.; Jacobi's translation.

[2] Cf. Hegel's remarks on the subject. *Gesch. der Phil.* i. 124 sq.

To sum up what we have been saying. In the Philosophy of the middle ages, spirit asserts itself as alien and opposed to nature: in modern Philosophy, it strives to regain unity with nature, without, however, losing the deep consciousness of the difference between the spiritual and the natural: in Greek Philosophy is represented that phase of scientific thought in which the discrimination and separation of the two elements are developed out of their original equipoise and harmonious co-existence, though this separation was never actually accomplished in the Hellenic period. While, therefore, in Greek, as in modern Philosophy, we find both the discrimination and the union of the spiritual and the natural, this is brought about in each case in a different manner and by a different connection. Greek Philosophy starts from that harmonious relation of spirit to nature in which the distinguishing characteristic of ancient culture generally consists; step by step, and half involuntarily, it sees itself compelled to discriminate them. Modern Philosophy, on the contrary, finds this separation already accomplished in the most effectual manner in the middle ages, and only succeeds by an effort in discovering the unity of the two sides. This difference of starting-point and of tendency determines the whole character of these two great phenomena. Greek Philosophy finally results in a dualism, which it finds impossible to overcome scientifically; and even in its most flourishing period the development of this dualism can be traced. Sophisticism breaks with simple faith in the veracity of the senses and of thought. Socrates breaks with unreflecting obedience to existing custom. Plato opposes to the empirical world an ideal world, but is unable to find in this ideal world any explanation of the other; he can only explain matter as something non-existent, and can only subject human life to the idea by the arbitrary measures of his State. Even Aristotle keeps pure spirit entirely distinct from the world, and thinks that man's reason is infused into him from without. In the lesser Socratic schools and the post-Aristotelian Philosophy this dualism is still more evident. But we have already seen that, in spite of this tendency, the original presupposition of Greek thought asserts itself in decisive traits; and we shall find that the true cause of its incapacity to reconcile these contradictions satisfactorily lies in its refusal to abandon that presupposition. The unity of spiritual and natural, which Greek thought demands and presupposes, is the direct unbroken unity of the classic theory of the world; when that is cancelled, there remains to it no possible way of filling up a chasm which, according to its own stand-point, cannot exist. The Hellenic character proper is not of course stamped with equal clearness on each of the Greek systems; in the later periods especially, of Greek

Philosophy it became gradually blended with foreign elements. Nevertheless, directly or indirectly, this character may plainly be recognised in all the systems; and Greek Philosophy, as a whole, may be said to move in the same direction as the general life of the people to which it belongs.

CHAPTER IV.

PRINCIPAL PERIODS IN THE DEVELOPMENT OF GREEK PHILOSOPHY.

We have divided Greek Philosophy into three periods, of which the second begins with Socrates and ends with Aristotle. The propriety of this division must now be more closely examined. The utility of such a course may seem indeed doubtful, since so eminent a historian as Ritter[1] is of opinion that history itself recognises no sections, and that therefore all division of periods is only a means of facilitating instruction, a setting up of resting places to take breath; and since even a disciple of the Hegelian school[2] declares that the History of Philosophy cannot be written in periods, as the links of History consist wholly of personalities and aggregates of individuals. This latter observation is so far true that it is impossible to draw a straight chronological line across a series of historical phenomena without separating what is really united, and linking together what is really distinct. For, in regard to chronology, the boundaries of successive developments overlap each other; and it is in this that the whole continuity and connection of historic as of natural development consists. The new form has already appeared, and has begun to assert itself independently, while the old form is still in existence. The inference from this, however, is not that the division into periods is to be altogether discarded, but only that it must be based upon facts, and not merely upon chronology. Each period lasts as long as any given historical whole continues to follow one and the same direction in its development; when this ceases to be the case, a new period begins. How long the direction is to be regarded as the same must be decided, here and everywhere, according to the part in which lies the centre of gravity of the whole. When from a given whole, a new whole branches off, its beginnings are to be referred to the subsequent period in proportion as they break with the previous historical connection, and present themselves under a new and original form. If any one supposes, however, that this grouping together of kindred phenomena is merely for the convenience of the historian or his reader, and has no concern with the matter itself, the discussions in our first chapter are amply sufficient to meet the objection. It surely cannot be considered unimportant, even for the purposes of convenience, where the divisions are made in a historical exposition; and, if this be conceded, it cannot be unimportant in regard to the matter itself. If one division gives us a clearer survey than another, the reason can only be that it presents a truer picture of the differences and relations of historical phenomena; the differences must, therefore, lie in the phenomena themselves, as well as in our subjective consideration of them. It is undeniable, indeed, that not only different individuals, but also different periods, have each a different character, and that the development of any given whole, whether great or small, goes on for a time in a definite direction, and then changes this direction to strike out some other course. It is this unity and diversity of historical character to which the periods have to conform; the periodic division must represent the internal relation of phenomena at the different epochs, and it is consequently as little dependent on the caprice of the historian as the distribution of rivers and mountains on that of the geographer, or the determination of natural kingdoms on that of the naturalist.

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[1] *Gesch. der Phil.*, 2nd edition, Pref. p. xiii.

[2] Marbach, *Gesch. der Phil.*, Pref. p. viii.

What division then shall we adopt in regard to the history of Greek Philosophy? It is clear from our second chapter that the commencement of this history ought not to be placed earlier than Thales. He was the first, as far as we know, who, in speaking of the primitive causes of all things, abandoned mythical language;—though it is true that the old custom of making the history of Philosophy begin with Hesiod is not even in our days, wholly discarded.[1] Socrates is generally considered as the inaugurator of the next great movement, and for this reason the second period is usually said to open with him. Some historians, however, would bring the first period to a close before the time of Socrates; for example, Ast,[2] Rixner,[3] and Braniss. Others, again, like Hegel, would prolong it beyond him.

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[1] It is still followed by Fries, *Gesch. der Phil.*, and Deutinger, *Gesch. der Phil.*, Vol. 1.

[2] *Grundriss einer Gesch. der Phil.*, 1 A § 43.

[3] *Gesch. der Phil.*, i. 44 sq.

Ast and Rixner distinguish in the history of Greek Philosophy the three periods of Ionian Realism, Italian Idealism, and the Attic combination of these two tendencies. Braniss [1] starts with the same fundamental distinction of Realism and Idealism, only he attributes both these tendencies to each of the first two periods. According to him, therefore, Greek thought, like Greek life, is determined by the original opposition of the Ionic and Doric elements. Absorption in the objective world is the characteristic of the Ionic; absorption in self, of the Doric race. In the first period, then, this opposition develops itself in two parallel directions of Philosophy, the one realistic, the other idealistic; in the second, this opposition is cancelled, and lost in the consciousness of the universal spirit; and in the third, the spirit, deprived of its content through Sophistic, seeks in itself a new and more lasting content. According to Braniss, therefore, there are three periods of Greek Philosophy. The first, beginning with Thales and Pherecydes, is further represented on the one side by Anaximander, Anaximenes, and Heracleitus; and on the other by Pythagoras, Xenophanes, and Parmenides; a Doric antithesis being opposed at each stage of this period to the Ionic thesis; finally, the results of the previous development are summed up in a harmonious manner by the Ionian Diogenes and the Dorian Empedocles. It is recognised that Becoming presupposes Being, that Being expands itself into Becoming, that the inner and outer, form and matter, unite in the consciousness of the universal spirit; the percipient spirit stands over against this universal spirit, and has to reflect it in itself. Here the second period commences; and in its development there are three moments. By Anaxagoras, spirit is distinguished from the extended object; by Democritus, it is opposed to the object as a purely subjective principle; by the Sophists, all objectivity is placed in the subjective spirit itself; the universal is at length completely suppressed, and spiritual life is entirely lost in the actual sensible presence. Thus thrown back upon itself, however, the spirit is forced to define its reality in a permanent manner, to enquire what is its absolute end, to pass from the sphere of necessity into that of liberty, and in the reconciliation of the two principles to attain the ultimate end of speculation. This is the commencement of the third period, which extends from Socrates to the end of Greek Philosophy.

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[1] *Gesch. der Phil. s. Kant*, i. 102 sqq.; 135; 150 sq.

Much may be urged against this derivation. In the first place, we must question the discrimination of an Ionic Realism and a Doric Idealism. What is here called Doric Idealism is, as we shall presently find,[1] neither idealism nor purely Doric. This at once destroys the basis of the whole deduction. Ast and Rixner, moreover, divide the Ionic and Doric Philosophy into two periods: a division quite unwarrantable, since these two philosophies were synchronous, and powerfully reacted upon each other. It is to some extent then more correct to treat them, like Braniss, as moments of one interdependent historical series. But we have no right to divide the series, as he does, into two parts, and make the difference between them analogous to that between the Socratic and pre-Socratic Philosophy. Neither of the three phenomena assigned by Braniss to his second period has this character. Atomistic (even as to date, hardly later than Anaxagoras) is a system of natural Philosophy, as much as any other of the earlier systems; and to the Empedoclean system especially (by virtue of a similar attitude to the Eleatics) it stands in so close an affinity that we cannot possibly place it in a separate period. It discovers no tendency to regard spirit as purely subjective, —its sole concern is the explanation of nature. So, too, in Anaxagoras we recognise a Physicist, and a Physicist anterior to Diogenes, whom Braniss places before him. His world-forming mind is primarily a physical principle, and he makes no attempt to enlarge the sphere of Philosophy beyond the accustomed limits. There is, therefore, no good ground for making as decided a line of demarcation before him as before Socrates. Even Sophistic cannot be separated from the systems of the first period, as will presently appear. The two periods into which Braniss has divided the pre-Socratic Philosophy are followed by a third, comprehending the whole further course of Philosophy to the end of Greek science. This partition is so rough, and takes so little account of the radical differences of the later systems, that it would of itself furnish a sufficient reason for repudiating the construction of Braniss.

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[1] Cf. the Introduction to the First Period.

On the other hand, however, Hegel goes too far in the contrary direction. He considers these differences so great that the opposition between the Socratic and the pre-Socratic schools has only a secondary importance in comparison with them. Of his three main periods, the first extends from Thales to Aristotle, the second comprehends all the post-Aristotelian philosophy, with the exception of neo-Platonism; the third embraces neo-Platonism. The first, he says,[1] represents the commencement of philosophising thought until its development and extension as the totality of Science. After the concrete idea has been thus attained, it makes its appearance in the second period as forming and perfecting itself in oppositions: a one-sided principle is carried out through the whole of the presentation of the world; each side developing itself as an extreme, and constituting in itself a totality in regard to its contrary. This breaking up of science into particular systems results in Stoicism and Epicureanism. Scepticism, as the negative principle, opposed itself to the dogmatism of both. The affirmative is the cancelling of this opposition, in the theory of an ideal world, or world of thought; it is the idea developed into a totality in neo-Platonism. The distinction between the old naturalistic philosophy and later science is brought forward as a ground of classification in the first period; it is not Socrates, however, who is the inaugurator of a new series of development, but the Sophists. Philosophy attains in the first part of this period, in Anaxagoras, to the conception of *νοῦς*; in the second part, *νοῦς* is apprehended by the Sophists, Socrates, and the imperfect Socratics, as subjectivity; and in the third part, *νοῦς* developes itself as objective thought, as the Idea, into a totality. Socrates, therefore, appears only as continuing a movement begun by others, not as the inaugurator of a new movement.

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[1] *Gesch. der Phil.*, i. 182 (cf. ii. 373 sq.). This, however, does not quite agree with the previous distinction of four stages, i. 118. Similarly Deutinger, whose exposition I cannot further discuss, either here or elsewhere (*loc. cit.* p. 78 sqq., 140 sqq., 152 sqq., 226 sqq., 290) makes one period from Thales to Aristotle (which is the second according to him), and divides it into three parts: 1, From Thales to Heracleitus; 2, from Anaxagoras to the Sophists; 3, from Socrates to Aristotle.

The first thing that strikes us in this division is the great disproportion in the content of the three periods. While the first is extraordinarily rich in remarkable personages and phenomena, and includes the noblest and most perfect forms of classic philosophy, the second and third are limited to a few systems which are unquestionably inferior in scientific content to those of Plato and Aristotle. This at once makes us suspect that too much of a heterogeneous character is included in this first period. And, in point of fact, the difference between the Socratic and pre-Socratic philosophy is in no respect less than that between the post-Aristotelian and the Aristotelian. Socrates not only developed a mode of thought already existing; he introduced into Philosophy an essentially new principle and method. Whereas all the previous Philosophy had been immediately directed to the object,—while the question concerning the essence and causes of natural phenomena had been the main question on which all others depended,—Socrates first gave utterance to the conviction that nothing could be known about any object until its universal essence, its concept, was determined; and that, therefore, the testing of our presentations by the standard of the concept—philosophic knowledge of self—is the beginning and the condition of all true knowledge. Whereas the earlier philosophers first arrived at the discrimination of presentation from knowledge through the consideration of things themselves; he, on the contrary, makes all knowledge of things dependent on a right view as to the nature of knowledge. With him, consequently, there begins a new form of science, Philosophy based upon concepts; dialectic takes the place of the earlier dogmatic; and in connection with this, Philosophy makes new and extensive conquests in hitherto unexplored domains. Socrates is himself the founder of Ethics; Plato and Aristotle separate Metaphysics from Physics; the philosophy of nature—until then, the whole of philosophy—now becomes a part of the whole; a part which Socrates entirely neglects, on which Plato bestows hardly any attention, and even Aristotle ranks below the 'first philosophy.' These changes are so penetrating, and so greatly affect the general condition and character of Philosophy, that it certainly appears justifiable to begin a new period of its development with Socrates. The only question that might arise is whether to make this beginning with Socrates, or his precursors the Sophists. But although the latter course has been adopted by distinguished authors,[1] it does not seem legitimate. Sophistic is doubtless the end of the old philosophy of nature, but it is not as yet the creation or beginning of a new philosophy: it destroys faith in the possibility of knowing the Real, and thereby discourages thought from the investigation of nature; but it has no new content to offer as a substitute for what it destroys; it declares man in his actions, and in his presentations, to be the measure of all things, but it understands by man, merely the individual in all the contingency of his opinions and endeavours; not the universal essential nature of man, which must be sought out scientifically. Though it is true, therefore, that the Sophists share with Socrates the general character of subjectivity, yet they cannot be said to have inaugurated, in the same sense that he did, a new scientific tendency. The closer definition of the two stand-points proves them to be very distinct. The subjectivity of the Sophists is only a consequence of that in which their philosophic achievement mainly consists—viz., the destruction of the earlier dogmatism: in itself this subjectivity is the end of all Philosophy; it leads to no new knowledge, nor even, like later scepticism, to a philosophic temper of mind; it destroys all philosophic effort, in admitting no other criterion than the advantage and caprice of the individual. Sophistic is an indirect preparation, not the positive foundation of the new system, which was introduced by Socrates. Now it is usual, generally speaking, to commence a new period where the principle which dominates it begins to manifest itself positively with creative energy, and with a definite consciousness of its goal. We open such a period in the history of religion with Christ, and not with the decay of naturalistic religions and Judaism; in Church history, with Luther and Zwinglius, not with the Babylonian exile, and the schism of the Popes; in political history, with the French Revolution, not with Louis XV. The history of Philosophy must follow the same procedure; and, accordingly, we must regard Socrates as the first representative of that mode of thought, the principle of which he was the first to enunciate in a positive manner, and to introduce into actual life.

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[1] In addition to Hegel, cf K. F. Hermann, *Gesch. d. Platonismus*, i. 217 sqq. Ast (*Gesch. der Phil.*, p. 96). Ueberweg (*Grundriss der Gesch. der Phil.*, i. § 9). Hegel, however, opens the second section of the first great period with the Sophists; Hermann and Ueberweg make them the commencement of their second period; and Ast of his third.

With Socrates then the second great period of Greek Philosophy begins. On the subject of its legitimate extent there is even more difference of opinion than on that of its commencement. Some make it end with Aristotle,[1] others with Zeno,[2] or Carneades;[3] a third class of historians, with the first century before Christ;[4] while a fourth is disposed to include in it the whole course of Greek Philosophy after Socrates, including the neo-Platonists.[5] In this case, again, our decision must depend on the answer to the question, how long the same main tendency governed the development of Philosophy? In the first place the close interconnection of the Socratic, Platonic, and Aristotelian philosophy is unmistakeable. Socrates first demanded that all knowledge and all moral action should start from knowledge of conceptions, and he tried to satisfy this demand by means of the epagogic method, which he introduced. The same conviction forms the starting-point of the Platonic system; but what in Socrates is merely a rule for scientific procedure, is developed by Plato into a metaphysical principle. Socrates had said: Only the knowledge of the concept is true knowledge. Plato says: Only the Being of the concept is true Being, the concept alone is the truly existent. But even Aristotle, notwithstanding his opposition to the doctrine of Ideas, allows this: he too declares the form or concept to be the essence and reality of things; pure form, existing for itself; abstract intelligence, restricted to itself—to be the absolutely real. He is divided from Plato only by his theory of the relation of the ideal form to the sensible phenomenon, and to that which underlies the phenomenon as its universal substratum—matter. According to Plato, the idea is separated from things, and exists for itself; consequently the matter of things, having no part in the idea, is declared by him to be absolutely unreal. According to Aristotle, the form is in the things of which it is the form; the material element in them must, therefore, be endowed with a capability of receiving form; matter is not simply non-Being, but the possibility of Being; matter and form have the same content, only in different fashion—in the one it is undeveloped, in the other developed. Decidedly as this contradicts the theory of Plato considered in its specific character, and energetically as Aristotle opposed his master, yet he is far from disagreeing with the universal presupposition of the Socratic and Platonic philosophy, viz. the conviction of the necessity of knowledge based on concepts, and of the absolute reality of form.

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[1] Brandis, Fries, and others.

[2] Tennemann, in his larger work.

[3] Tiedemann, *Geist. der Spek. Phil.*

[4] Tennemann (*Grundriss*). Ast, Reinhold, Schleiermacher, Ritter, Ueberweg, and others.

[5] Braniss, vide *supra*.

On the contrary, his very reason for discarding the doctrine of Ideas, is that Ideas cannot be substantial and truly existent, if they are separated from things.

Thus far then we have a continuous development of one and the same principle; it is one main fundamental intuition which is presented in these three forms. Socrates recognises in the concept the truth of human thought and life; Plato, the absolute, substantial reality; Aristotle not merely the essence, but also the forming and moving principle of empirical reality; and in all we see the development of the self-same thought. But with the post-Aristotelian schools this order of development ceases, and thought takes another direction. The purely scientific interest of Philosophy gives place to the practical; the independent investigation of nature ceases, and the centre of gravity of the whole is placed in Ethics: and in proof of this altered position, all the post-Aristotelian schools, so far as they have any metaphysical or physical theory, rest upon older systems, the doctrines of which they variously interpret, but which they profess to follow in all essential particulars. It is no longer the knowledge of things as such with which the philosopher is ultimately concerned, but the right and satisfactory constitution of human life. This is kept in view even in the religious enquiries to which Philosophy now applies itself more earnestly. Physics are regarded by the Epicureans only as a means to this practical end; and though the Stoics certainly ascribe a more independent value to general investigations concerning the ultimate grounds of things, yet the tendency of those investigations is nevertheless determined by that of their Ethics. In a similar manner, the question of a criterion of truth is answered from a practical point of view by the Stoics and Epicureans. Lastly, the Sceptics deny all possibility of knowledge, in order to restrict Philosophy entirely to practical matters. Even this practical philosophy, however, has changed its character. The earlier combination of Ethics with politics has ceased; in place of the commonwealth in which the individual lives for the whole, we find the moral ideal of the wise man who is self-sufficient, self-satisfied, and self-absorbed. The introduction of the idea into practical life no longer appears as the highest object to be attained; but the independence of the individual in regard to nature and humanity,—apathy, ἀταραξία, flight from the world of sense; and though the moral consciousness, being thus indifferent to the outward, gains a freedom and universality hitherto unknown to it, though the barriers of nationality are now first broken down, and the equality and affinity of all men, the leading thought of cosmopolitism is recognised, yet on the other hand Morality assumes a one-sided and negative character, which was alien to the philosophy of the classic period. In a word, the post-Aristotelian philosophy bears the stamp of an abstract subjectivity, and this so essentially separates it from the preceding systems that we have every right to conclude the second period of Greek Philosophy with Aristotle.

It might, indeed, at first sight, appear that an analogous character is already to be found in Sophistic and the smaller Socratic schools. But these examples cannot prove that Philosophy as a whole had received its later bent in the earlier period. In the first place, the phenomena which prefigure in this way the after philosophy are few in number, and of comparatively secondary importance. The systems which give the measure of the period and by which the form of Philosophy, generally speaking, was determined, bear quite another character. And in the second place, this affinity itself, when more closely examined, is less than it appears on a superficial glance. Sophistic has not the same historical significance as the later scepticism ; it did not arise out of a general lassitude of scientific energy, but primarily out of an aversion to the prevailing naturalistic philosophy; and it did not, like scepticism, find its positive completion in an unscientific eclecticism or a mystic speculation, but in the Socratic philosophy of the concept. The Megaric philosophers are rather offshoots of the Eleatics than precursors of the sceptics; their doubts are originally directed against sense-knowledge, not against reason-knowledge. A universal scepticism is not required by them, nor do they aspire to *ἀταραξία* as the practical end of scepticism. Between Aristippus and Epicurus there exists this striking difference: the former makes immediate and positive pleasure the highest good, the latter absence of pain, as a permanent condition. Aristippus seeks the enjoyment of that which the external world offers; Epicurus seeks man's independence in regard to the external world. Cynicism, indeed, pushes indifference to the outward, contempt of custom, and repudiation of all theoretic enquiry further than the

Stoa, but the isolated position of this school, and the crude form of its doctrine, sufficiently prove how little can be argued from it as to the whole contemporary mode of thought. This remark applies to all these imperfect Socratic schools. Their influence is not to be compared with that of the Platonic and Aristotelian doctrines; and they themselves prevent the possibility of their more important action, by disdaining to develop the principle of intellectual knowledge into a system. Only after the Greek world had undergone the most radical changes could attempts like those of the imperfect Socratics be renewed with any prospect of success.

The second period then, closes with Aristotle, and the third begins with Zeno, Epicurus, and the contemporary scepticism. Whether or not it should extend to the conclusion of Greek Philosophy is a doubtful question. We shall find later on,[1] that in the post-Aristotelian philosophy three divisions may be distinguished: the first, including the bloom of Stoicism, of Epicureanism, and of the older Scepticism; the second, the period of Eclecticism, the later Scepticism, and the precursors of neo-Platonism; the third, neo-Platonism in its various phases. If we count these three divisions as the third, fourth, or fifth periods of Greek Philosophy, there is this advantage, that the several periods are much more equal in duration than if we make all three into one period. But though they are thus equalised chronologically, they become even more disproportionate in content; for the one century from the appearance of Socrates to the death of Aristotle embraces an amount of scientific achievement equal to the eight or nine following centuries put together. And, what is here most essential, Philosophy in these 900 years moves in the same uniform direction. It is governed by an exclusive subjectivity, which is estranged from the purely speculative interest in things, and reduces all science to practical culture and the happiness of man. This character is displayed (as we have just observed), by Stoicism, Epicureanism, and Scepticism. It is seen in the Eclecticism of the Roman period, which selects what is probable out of the different systems entirely from practical points of view, and according to the standard of subjective feeling and interest. Finally, it is an essential part of neo-Platonism. This will be shown more in detail hereafter; at present it is enough to notice that the attitude of the neo-Platonists to natural science is exactly the same as that of the other schools posterior to Aristotle; and that their physics tend in the same direction as the Stoical teleology, only more exclusively. Their ethical doctrine is also very closely allied to that of the Stoics, being indeed the last outcome of that ethical dualism which developed itself after the time of Zeno; and the dualism contained in their anthropology had already been prepared by Stoicism. In regard to religion, the position originally adopted by neo-Platonism was precisely that of the Stoa, and even its metaphysic, including the doctrine of the intuition of the Deity approaches much nearer to the other Aristotelian systems than might at first sight be supposed. The neo-Platonic theory of emanation, for example, is an unmistakable repetition of the Stoic doctrine of the Divine reason permeating the whole universe with its various forces: the only ultimate distinction between them is the transcendency of the Divine; from which arises for man, the requirements of an ecstatic contact with Deity. This transcendency itself, however, is a consequence of the previous development of science, and of the sceptical denial of all objective certainty. The human spirit, scepticism had said, has absolutely no truth within itself. It must, therefore, says neo-Platonism, find truth absolutely outside itself, in its relation to the Divine, which is beyond its thought and the world cognisable by thought. But it follows that the world beyond is presented entirely according to subjective points of view, and determined by the necessities of the subject; and just as the different spheres of the real correspond to the different parts of human nature, so the whole system is designed to point out and to open the way for man's communion with God. Here too then, it is the interest of human spiritual life, not that of objective knowledge as such, which governs the system; and thus neo-Platonism follows the tendency peculiar to the whole of Philosophy subsequent to Aristotle. While, therefore, I attach no undue importance to this question, I prefer to unite the three sections into which the history of Philosophy after Aristotle is divided into one period, although its outward extent far exceeds that of either of the preceding periods.

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[1] Vide the Introduction to Part III.

To sum up, I distinguish three great periods of Greek Philosophy. The philosophy of the first is Physics, or more accurately *a physical dogmatism;* it is physical, because it primarily seeks to explain natural phenomena from their natural causes, without making any definite discrimination of spiritual and corporeal in things, or the causes of things; it is a dogmatism, because it directly pursues the knowledge of the objective, without any previous enquiry into the conception, possibility, and conditions of knowledge. In Sophistic, this attitude of thought to the external world is at an end, man's capacity for the knowledge of the real is called in question, philosophic interest is averted from nature, and the necessity of discovering a higher principle of truth on the soil of human consciousness makes itself felt. Socrates answers the demand in declaring the cognition of the concept the only way to true knowledge and true virtue; from which Plato further concludes, that only pure concepts can be true reality; he establishes this principle dialectically in conflict with ordinary presentative opinion, and develops it in a system embracing Dialectic, Physics, and Ethics. Finally, Aristotle discovers the concept in the phenomena themselves, as their essence and entelechy, carries it in the most comprehensive manner into all the spheres of the actual, and establishes the principles of the scientific method on a firm basis for after times. In place of the former one-sided philosophy of nature there thus appears in the second period a philosophy of the concept, founded by Socrates and perfected by Aristotle. But since the idea is thus opposed to the phenomenon, since a full essential Being is ascribed to the idea, and only an imperfect Being to the phenomenon, a dualism arises, which appears indeed more glaring and irreconcilable in Plato, but which even Aristotle is unable to overcome either in principle or in result; for he, too, begins with the opposition of form and material, and ends with that of God and the world, of spiritual and sensible. Only the spirit in its absoluteness, directed to no external object and sufficing to itself, is perfect and infinite; that which is external to it cannot increase this inner perfection or be otherwise than valueless and indifferent for it. So, too, the human spirit ought to seek its unqualified satisfaction in itself, and in its independence of everything external. Thought in pursuing this tendency withdraws from the object into itself, and the second period of Greek Philosophy passes into the third.

Or to state the same more succinctly. The spirit, we might say, is, during the first stage of Greek thought, immediately present to itself in the natural object; in the second it separates itself from the natural object, that it may attain a higher truth in the thought of the super-sensible object; and in the third it asserts itself in its subjectivity, in opposition to the object, as supreme and unconditioned. The stand-point, however, of the Greek world is thereby abandoned, while at the same time no deeper reconciliation of the opposing elements is possible on Greek soil. Thought being thus separated from the actual, loses its content, and becomes involved in a contradiction, for it maintains subjectivity to be the final and highest form of being, and yet opposes to it the Absolute in unattainable transcendency. To this contradiction Greek Philosophy ultimately succumbed.

FIRST PERIOD.

THE PRE-SOCRATIC PHILOSOPHY.

INTRODUCTION.

CHARACTER AND DEVELOPMENT OF PHILOSOPHY DURING THE FIRST PERIOD.

FOUR schools are usually distinguished in the pre-Socratic period—the Ionic, the Pythagorean, the Eleatic, and the Sophistic. The character and internal relation of these schools are determined, partly according to the scope, partly according to the spirit of their enquiries. In regard to the former, the distinctive peculiarity of the pre-Socratic period is marked in the isolation of the three branches which were afterwards united in Greek Philosophy: by the Ionians, we are told, Physics were exclusively developed; by the Pythagoreans, Ethics; by the Eleatics, Dialectic: in Sophistic, we are taught to see the decline and fall of this exclusive science, and the indirect preparation for a more comprehensive science.[1] This difference of scientific tendency is then brought into connection with the intrinsic difference between the Ionic and Doric tribes:[1] some writers[2] making this the basis of their whole theory of ancient Philosophy, and deriving from the particular traits of the Ionic and Doric character, the philosophic opposition of a realistic and an idealistic theory of the world. How the further division of our period is then connected with this point of view has been shown already.

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[1] Schleiermacher, *Gesch. der Phil.* p. 18 sq., 51 sq.; Ritter, *Gesch. der Phil.* i. 189 sqq.; Brandis, *Gesch. der Gr.-Röm. Phil.* i. 42 sqq.; Fichte's *Zeitschr. für Philos.* xiii. (1844) p. 131 sqq. In his *Gesch. der Entwicklungen d. Griech. Phil.* (i. 40), which appeared subsequently, Brandis abandoned this view, and adopted the following division: 1. The older Ionian Physics, including the Heracleitean doctrine. 2. The Eleatics. 3. The attempts to reconcile the opposition of Being and Becoming (Empedocles, Anaxagoras, and the Atomists). 4. The Pythagorean doctrine. 5. Sophistic.

These differences, however, are by no means so real or so deeply seated as is here presupposed. Whether the Pythagorean doctrine was essentially ethical, and the Eleatic, dialectical in character, or whether these elements can be regarded as determining the two systems, we shall presently enquire; and we shall find that they, as much as any part of the pre-Socratic Philosophy, arose from the inclination of natural science to investigate the essence of things, and especially of natural phenomena. Aristotle makes the general assertion that with Socrates, dialectical and ethical enquiries began, and physical enquiries were discontinued.[3] Hermann is, therefore, quite justified in saying that it is impossible to maintain, even from the stand-point of the ancient thinkers, that Dialectics, Physics and Ethics came into existence together, and were of equal importance contemporaneously, for there could have been no question of any leading ethical principle until the preponderance of spirit over matter had been recognised; nor could Dialectic, as such, have been consciously employed, before form in contrast with matter had vindicated its greater affinity to spirit. The object of all philosophic investigation, he continues, in its commencement was nature, and if even enquiry was incidentally carried into other spheres, the standard which it applied, being originally taken from natural science, remained foreign to those spheres. We are, therefore, merely importing our own stand-point into the history of the earliest philosophic systems, in ascribing a dialectic character to one, an ethical character to another, a physiological character to a third; in describing this system as materialistic, and that as formalistic, while all in truth pursue the same end, only in different ways.[1] The whole pre-Socratic Philosophy is in its aim and content a philosophy of nature, and though ethical or dialectical conceptions may appear here and there in it, this never happens to such an extent, nor is any system sufficiently dis-

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[1] Cf. Schleiermacher, *loc. cit.*, p. 18 sq. 'Among the Ionians,' he says, 'the Being of things in man is the predominant interest, and calm contemplation finds its expression in Epic poetry. Among the Dorians the Being of man in things predominates; man strives against things, asserts his independence in regard to them, and proclaims himself as a unity in Lyric poetry. Hence the development of Physics by the Ionians, and of Ethics by the Pythagoreans. As Dialectic, is equally opposed to the two branches of Philosophy, so the Eleatics are neither Ionians nor Dorians, but a union of the two; they are Ionian by birth, and Dorian by language.' Ritter expresses similar opinions, *loc. cit.* Ritter shares them to some extent (p. 47), and in a less degree, Brandis, p. 47.

[2] Ast, Rixner, Braniss (vide *supra*, p. 166 sqq.) Petersen, *Philologisch. histor. Studien*, p. 1 sqq.; Hermann, *Geschichte und System des Plato*, i. 141 sq., 160; cf. Böckh's excellent remarks on this subject, Philolaus, p. 39 sqq.

[3] *Part. Anim.* i. 1, 642 a, 24: among the earlier philosophers there are only scattered fore-

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casts of the conception of formal causes: *αἴτιον δὲ τοῦ μὴ ἐλθεῖν τοὺς προγενεστέρους ἐπὶ τὸν τρόπον τοῦτον, ὅτι τὸ τί ἦν εἶναι καὶ τὸ ὁρίσασθαι τὴν οὐσίαν οὐκ ἦν, ἀλλ' ἥψατο μὲν Δημόκριτος πρῶτος, ὡς οὐκ ἀναγκαίου δὲ τῇ φυσικῇ θεαί-ουωρίᾳ, ἀλλ' ἐκφερόμενος ὑπ' αὐτοῦ τοῦ πράγματος, ἐπὶ Σωκράτους δὲ τοῦτο μὲν ηὐξήθη, τὸ δὲ ζητεῖν τὰ περὶ φύσεως ἔληξε, πρὸς δὲ τὴν χρήσιμον ἀρετὴν καὶ τὴν πολιτικὴν ἀπέκλιναν οἱ φιλοσοφοῦντες.*

[1] *Gesch. und Syst. d. Plato*, i. 140 sq.

tinguished in this respect from all the others, that we can properly characterise it as dialectical or ethical.

This result must at once cause us to mistrust any discrimination of a realistic and an idealistic philosophy. True idealism can only exist where the spiritual is consciously distinguished from the sensible, and regarded as the more primitive of the two. In that sense, for example, Plato, Leibniz and Fichte are idealists. Where this is the case, there always arises the necessity for making the spiritual as such the object of enquiry; Dialectic, Psychology, Ethics are separated from natural philosophy. If, therefore, neither of these sciences attained a separate development previous to Socrates, it proves that the definite discrimination of the spiritual from the sensible, and the derivation of the sensible from the spiritual—in which philosophic idealism consists—was still alien to this period. Neither the Pythagoreans nor the Eleatics are, in reality, idealists; at any rate they are not more so than other philosophers, who are assigned to the realistic division. In comparison with the older Ionic school, we find, indeed, that they attempt to get beyond the sensible phenomenon; instead of seeking the essence of all things like their predecessors in a corporeal substratum, the Pythagoreans sought it in Number, the Eleatics in Being without further determination. But the two systems do not advance equally far in this direction; for if the Pythagoreans give to Number as the universal form of the sensible, the same position and significance as the Eleatics subsequently to Parmenides give to the abstract concept of Being, they stop greatly short of the Eleatics in the abstraction of the qualities of the sensible phenomenon. It would, therefore, be more correct to speak of three philosophic tendencies instead of two: a realistic, an idealistic, and an intermediate tendency. We have really, however, no right to describe the Italian philosophers as Idealists. For although their first principle is, according to our ideas, incorporeal, the precise discrimination of spiritual from corporeal is with them entirely wanting. Neither the Pythagorean Number, nor the Eleatic One, is a spiritual essence, distinct from the sensible, like the Platonic ideas; on the contrary, these philosophers maintain that sensible things are according to their true essence, numbers; or that they are one invariable substance.[1] Number and Being are the substance of the bodies themselves,—the matter of which the bodies consist, and for this reason they are apprehended sensuously. Conceptions of number and conceptions of magnitude interpenetrate one another with the Pythagoreans; numbers become something extended; and among the Eleatics, even Parmenides describes Being as the substance which fills space. So in the further development of the systems, there is a confusion of spiritual and corporeal. The Pythagoreans declare bodies to be numbers: but virtue, friendship and the soul are also numbers, or numerical proportions; nay, the soul itself is regarded as a corporeal thing.[2] Similarly, Parmenides says,[3] that reason in man depends upon the admixture of his bodily parts, for the body and the thinking principle are one and the same; even the celebrated proposition about the unity of thought and Being[1] has not the same meaning with him as in modern systems. It cannot be, as Ribbing calls it,[2] 'the principle of idealism,' for it is not derived from the theorem that all Being arises from Thought, but conversely from the theorem that Thought falls under the conception of Being; in the former case only could it be idealistic, in the latter it must be considered realistic. Again, when Parmenides connects his Physics with his doctrine of Being, he parallels the antithesis of Being and non-Being, not with the antithesis of spiritual and corporeal, but with that of light and darkness. Aristotle asserts that the Pythagoreans presuppose, like the other natural philosophers, that the sensible world embraces all reality;[3] he makes them to differ from Plato in that they hold numbers to be the things themselves, whereas Plato distinguishes the ideas from things;[4] he describes the Pythagorean Number, notwithstanding its incorporeality, as a material principle.[5] He includes Parmenides,

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[1] This may be in itself a contradiction (as Steinhart points out in the *Hall. Allg. Literaturz.* 1845, Nov. p. 891), but it does not follow that it may not have been held by the ancient philosophers.

[2] Aristotle, *De An.* i. 2, 404 a, 17. Vide *infra*, Pythagoreans.

[3] That Parmenides says this only in the second part of his

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poem proves nothing against the above application of the words. If he had been clearly conscious of the difference between spiritual and corporeal, he would not thus have expressed himself even in his hypothetical explanation of phenomena.

[1] V. 94 sqq.

[2] *Genet. Darst. der platon. Ideenlehre*, i. 378, cf. 28 sq.

[3] *Metaph.* i. 8, 989 b, 29 sqq. The Pythagoreans, it is true, admit non-sensible principles, but they nevertheless confine themselves entirely to the explanation of nature ὡς ὁμολογοῦντες τοῖς ἄλλοις φυσιολόγοις, ὅτι τό γε ὂν τοῦτ' ἐστιν ὅσον αἰσθητόν ἐστι καὶ περιείληφεν ὁ καλούμενος οὐρανός.

[4] *Metaph.* i. 6, 987 b, 25 sqq.

[5] *Metaph.* i. 5, 989 a, 15: Φαίνονται δὴ καὶ οὗτοι τὸν ἀριθμὸν νομίζοντες ἀρχὴν εἶναι καὶ ὡς ὕλην τοῖς οὖσι, καὶ ὡς πάθη τε καὶ ἕξεις. *Ibid.* b, 6: ἐοίκασι δ' ὡς ἐν ὕλης εἴδει τὰ στοιχεῖα τάττειν· ἐκ τούτων γὰρ ὡς ἐνυπαρχόντων συνεστάναι καὶ πεπλάσθαι φασὶ τὴν οὐσίαν.

with Protagoras, Democritus and Empedocles, among those who held that the sensible only is the real;[1] and it is from this source that he derives the Eleatic theory of the sensible world.[2] On all these points we must allow him to be fully justified. The Italian philosophers likewise commence with an enquiry into the essence and grounds of sensible phenomena; and they seek for these in that which underlies things, and is not perceptible to sense. In so doing, they transcend indeed the ancient Ionian Physics, but not the later systems of natural philosophy. That the true essence of things is to be apprehended not by the senses, but by the understanding alone, is also taught by Heracleitus, Empedocles, Anaxagoras, and the Atomistic Philosophy. They, too, hold that the ground of the sensible lies in the not-sensible. Democritus himself, thorough materialist as he was, has no other definition for matter than the Eleatic conception of Being; Heracleitus considers the law and relation of the whole to be alone the permanent element in phenomena; Anaxagoras is the first who distinguishes spirit clearly and definitely from matter, and he is for that reason, in a well-known passage of Aristotle, placed far above all his predecessors.[3] If, therefore, the opposition of Materialism and Idealism is to furnish a principle of division for ancient philosophy, this division must be limited not only, as Braniss maintains, to the epoch preceding Anaxagoras, but preceding Heracleitus. Even then, strictly speaking, it is not applicable, nor does it take account of the intermediate position of the Pythagoreans between the Ionians and the Eleatics.

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[1] *Metaph.* iv. 5, 1010 a. 1 (after speaking of Protagoras, Democritus, Empedocles, and Parmenides): αἴτιον δὲ τῆς δόξης τούτοις, ὅτι περὶ μὲν τῶν ὄντων τὴν ἀλήθειαν ἐσκόπουν, τὰ δ' ὄντα ὑπέλαβον εἶναι τὰ αἰσθητὰ μόνον.

[2] *De Cœlo*, iii. 1, 298 b, 21 ff: ἐκεῖνοι δὲ [οἱ περὶ Μέλισσόν τε καὶ Παρμενίδην] διὰ τὸ μηθὲν μὲν ἄλλο παρὰ τὴν τῶν αἰσθητῶν οὐσίαν ὑπολαμβάνειν εἶναι, τοιαύτας δέ τινας [sc. ἀκινήτους] νοῆσαι πρῶτοι φύσεις εἴπερ ἔσται τις γνῶσις ἢ φρόνησις, οὕτω μετήνεγκαν ἐπὶ ταῦτα τοὺς ἐκεῖθεν λόγους.

[3] *Metaph.* i. 3, 984 b, 15: νοῦν δή τις εἰπὼν ἐνεῖναι καθάπερ ἐν τοῖς ζῴοις

This double tendency of philosophic thought is also said to correspond with the opposition of the Ionic and Doric elements, and, accordingly, all the philosophers until the time of Socrates, or rather Anaxagoras, are assigned either to an Ionic or a Doric series of development. This division is certainly more exact than that of some of the ancient historians,[1] who divided the whole of Greek Philosophy into Ionian and Italian. But even in regard to the most ancient schools, so far as their internal relations have to be represented, such a division can hardly be carried out. Among the Dorians, Braniss counts Pherecydes, the Pythagoreans, the Eleatics and Empedocles. Ast makes the addition of Leucippus and Democritus. Now it is difficult to see how Pherecydes can be placed among the Dorians, and the same may be said of Democritus, and probably

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καὶ ἐν τῇ φύσει τὸν αἴτιον τοῦ κόσμου καὶ τῆς τάξεως πάσης οἷον νήφων ἐφάνη παρ' εἰκῇ λέγοντας τοὺς πρότερον.

[1] Diogenes, i. 13; that he is here following older authorities is clear (as Brandis *loc. cit.* p. 43 shows) from the fact of the schools he mentions only coming down to the time of Clitomachus (129–110 B.C.) cf. Augustine. *Civ. Dei*, viii. 2; the Aristotelian Scholiast, *Schol. in Arist.*, 323, a, 36, and the Pseudo-Galen (*Hist. Phil.* c. 2, p. 228) Kühn; this last further divides the Italian philosophers into Pythagoreans and Eleatics, and so far agrees with the theory of three schools—Italian, Ionian, and Eleatic (Clemens, *Al. Strom.* i. 300 c.) The review of the earlier philosophers in Aristotle's first book of Metaphysics follows the order of dogmatic points of view, and would be out of place in regard to our present purpose.

of Leucippus. Moreover, the founder of Pythagorism was by birth an Ionian of Asia Minor; and though the Doric spirit manifests itself in his mode of life, his philosophy seems to betray the influence of the Ionian Physics. Empedocles was born, it is true, in a Doric colony; but the language of his poem is that of the Ionian epos. The Eleatic School was founded by an Ionian of Asia Minor, it received its final development in an Ionian settlement, and in the person of one of its last great representatives, Melissus, it returned to Asia Minor.[1] There remain, therefore, of pure Dorians, only the Pythagoreans, with the exception of the founder of the school, and, if we will, Empedocles. It has been said that it is not necessary that the philosophers of either division should belong to it also by birth;[2] and this condition certainly ought not to be insisted on in the case of every individual. But it is surely indispensable with regard to each division as a whole; all their members should be either Doric or Ionic, if not by birth, at least by education. Instead of this, we find more than half the so-called Dorian philosophers, not only belonging by birth and extraction to the Ionian race, but receiving their education from it, through national customs, civil institutions, and what is especially important, language. Under these circumstances, differences of tribe are of very secondary moment. They may have influenced the direction of thought, but cannot be regarded as having determined it.[1]

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[1] Petersen (*Philol. hist. Studien*, p. 15) also thinks he can discover an Æolic element in the Eleatics. That there is not the slightest ground for this conjecture has been shown by Hermann, *Zeitschrift für Alterthumsw.*, 1834, p. 298.

[2] Braniss, *loc. cit.* p. 103.

In the ulterior development of these two series, the Ionian and the Dorian, Braniss opposes Thales to Pherecydes, Anaximander to Pythagoras, Anaximenes to Xenophanes, Heracleitus to Parmenides, Diogenes of Apollonia to Empedocles. Such a construction, however, does great violence to the historical character and relation of these men. On the Ionian side, it is incorrect to place Heracleitus beside the earlier philosophers of that school, for he does not stand in a relation of simple progression to Anaximenes, as Anaximenes stands to Anaximander. Diogenes, on the other hand, was entirely uninfluenced by the philosophy of Heracleitus; we cannot, therefore, say with Braniss (p. 128) that he was expressly related to that philosopher, and that he summed up the result of the whole Ionic development. Braniss is even more arbitrary in his treatment of the Dorians. In the first place, Pherecydes, as has already been said (p. 89 sq.), is not, properly speaking, a philosopher, still less is he a Doric or idealistic philosopher; for what we know of him bears a close relation to the old Hesiodic-Orphic cosmogony, the mythic precursor of the Ionic Physics. Even the discrimination of organising force from matter, on which Braniss lays so much stress (p. 108) had been brought forward in a mythic manner by Hesiod, and in a more definite and philosophic form by Anaxagoras the Ionian; whereas it is entirely wanting in the Italian Eleatics,[2] and is of doubtful value among the Pythagoreans. It is true that the belief in the transmigration of souls was shared by Pherecydes with Pythagoras, but this isolated doctrine, which is rather religious than philosophic, cannot be taken as decisive for the position of Pherecydes in history. Further, if we connect Xenophanes with Pythagoras, as Parmenides is connected with Xenophanes, or Anaximenes with Anaximander, we ignore the internal difference which exists between the Eleatic stand-point and the Pythagorean. It is manifestly improper to treat a doctrine which has a principle of its own, essentially distinct from the Pythagorean principle, and which developed itself in a separate school, as a mere continuation of Pythagorism. Again, as we shall presently show, to place Empedocles exclusively in the Pythagorean-Eleatic series is to close our eyes to all aspects of the question but one. Lastly, what right has Braniss to pass over the later development of Pythagorism accomplished by Philolaus and Archytas; and the development of the Eleatic doctrine effected by Zeno and Melissus, while he recognises men like Anaximenes and Diogenes of Apollonia, who were in no way more important, as representatives of particular stages of development? His scheme is a Procrustean bed for historical phenomena, and the Doric Philosophy suffers doubly. At the one end it is produced beyond its natural proportions, and at the other it is denuded of members which are essentially part of its growth.

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[1] So Ritter also decides, i. 191 sq.

[2] The second part of Parmenides' poem (v. 131) mentions Eros as plastic force; but this second part speaks only from the point of view of ordinary opinion.

The same holds good of Petersen's[1] earlier attempt to determine the historical relation of the pre-Socratic schools. Here, too, the general principle is the opposition of realism, or rather materialism, and idealism. This opposition developes itself in three sections, each of which is again subdivided into two parts: first, the opposing elements stand over against one another in sharp contrast; and secondly, there arise various attempts to conciliate them, which, however, accomplish no real adjustment, but still incline to one or other of the two sides. In the first section, the oppositions begin to develop themselves—the mathematical idealism of the Doric Pythagoreans confronts the hylozoistic materialism of the older Ionians (Thales, Anaximander, Anaximenes, Heracleitus and Diogenes). A reconciliation is next attempted on the idealistic side by the Eleatics; on the materialistic by the physician Elothales of Cos, his son Epicharmus and Alcmæon. In the second section, the contrasts become more marked; we encounter, on the one hand, pure materialism, in the Atomists; on the other, pure idealism in the later Pythagoreans, Hippasus, Œnopides, Hippo, Ocellus, Timæus, and Archytas. Between these two, we find on the idealistic side the pantheism of Empedocles, on the materialistic side the dualism of Anaxagoras. In the third and last section both tendencies pushed to excess equally lead to the destruction of Philosophy through the scepticism of the Sophists. Thus one uniform scheme is undoubtedly carried through the whole pre-Socratic Philosophy, but it is a scheme that scarcely corresponds with the actual order of history. It is unwarrantable, as we have just seen, to divide the philosophers of this period into materialists, or realists, and idealists. Nor can we, for reasons to be stated more fully later on, admit the propriety of placing Heracleitus in one category with the ancient Ionians, among the materialists. On the other hand, we must demur to the separation of the later Pythagoreans from the earlier; because the so-called fragments of their writings, which alone would justify it, are certainly to be regarded as forgeries of the neo-Pythagoreans. How the Eleatics can be assigned to an intermediate position between the Ionians and Pythagoreans, whereas they carried to the utmost that abstraction from the sensible phenomena which the Pythagoreans had begun, it is difficult to say, nor can we concur in opposing to the Eleatics, Elothales, Epicharmus, and Alcmæon as materialists with incipient dualism. These men were not, indeed, systematic philosophers; but any isolated philosophic sentences they adopted seem to have been chiefly derived from the Pythagoreans and Eleatic doctrines. Lastly, how can Empedocles be considered an idealist; and Anaxagoras with his theory of νοῦς a materialist? and how can the system of Empedocles, with its six primitive essences, of which four were of a corporeal kind, be described as pantheism, and more particularly as idealistic pantheism?[1]

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[1] *Philol. hist. Stud.* pp. 1-40. On the other hand, cf. Hermann (*Zeitschr. für Alterthumsw.*, 1834, p. 285 sqq.), from whom the above remarks are partly taken.

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[1] Steinhart is allied with Braniss and Petersen (*Allg. Encykl. v. Ersch. und Grube, Art.* '*Ionische Schule*,' *Sect.* 2, vol. xxii. 457. He distinguishes, like them, the Ionic and Doric Philosophy; in the case of the Pythagoreans, however, and still more in that of the Eleatics, what he finds is not pure Dorianism, but a mixture of the Doric and Ionic elements. The Ionic Philosophy he considers to have had three stages of development. In Thales, Anaximander, and Anaximenes, he says, we first find obscure and scattered intimations of a spiritual power that rules in the world. In Heracleitus, Diogenes,

The foregoing discussions have now paved the way for a positive determination of the character and course of philosophic development during our first period. I have characterised the Philosophy of that period (irrespectively for the present of Sophistic), as a philosophy of nature. It is so by virtue of the object which occupies it: not that it limits itself exclusively to nature in the narrower sense,—that is to say, to the corporeal, and the forces unconsciously working in the corporeal; for such a limit of its sphere would necessarily presuppose a discrimination of spiritual and corporeal which does not as yet exist. But it is for the most part occupied with external phenomena; the spiritual, so far as that domain is touched, is regarded from the same point of view as the corporeal; and consequently there can be no independent development of Ethics and Dialectic. All reality is included under the conception of Nature, and is treated as a homogeneous mass, and since that which is perceptible to the senses always forces itself first upon our observation, it is natural that everything should at first be derived from those principles which appear most adapted to explain sensible existence. The intuition of nature is thus the starting-

and above all in Anaxagoras, the recognition of the spiritual principle becomes constantly clearer. Lastly, Leucippus and Democritus deny the spiritual principle in a conscious manner, and thus prepare the destruction of this exclusively physical philosophy. Leaving out of the question the opposition of the Doric and Ionic elements, the importance of which Steinhart himself considerably restricts, it seems to me a doubtful proceeding to separate Empedocles from the Atomists and Anaxagoras, to whom he is so nearly related; nor can I convince myself that the Atomistic Philosophy had its origin in a reaction against the theory of a world-forming spirit, and is later in its origin than the Anaxagorean physics. And lastly, as will presently appear, I cannot altogether agree with Steinhart's view of Diogenes.

point of the earliest philosophy, and even when immaterial principles are admitted, it is evident that they have been attained through reflection on the data furnished by the senses, not through observation of spiritual life. The Pythagorean doctrine of numbers, for instance, is immediately connected with the perception of regularity in the relations of tones, in the distances and movements of the heavenly bodies; and the doctrine of Anaxagoras of the *νοῦς* which forms the world has reference primarily to the wise organisation of the world, and especially to the order of the celestial system. Even the Eleatic theses of the unity and unchangeableness of Being are not arrived at by opposing the spiritual as a higher reality to the sensible phenomena; but by eliminating from the sensible all that seems to involve a contradiction, and by conceiving the corporeal or the plenum in an entirely abstract manner. Here too, therefore, it is, generally speaking, nature with which Philosophy is concerned.

To this its object, thought still stands in an *immediate* relation, and considers the material investigation of nature as its first and only problem. The knowledge of the object is not as yet dependent on the self-knowledge of the thinking subject, on a definite consciousness of the nature and conditions of knowing; on the discrimination of scientific cognition and unscientific presentation. This discrimination is constantly spoken of from the time of Heracleitus and Parmenides, but it appears, not as the basis, but only as a consequence of the enquiry into the nature of things. Parmenides denies the trustworthiness of the sensuous perception, because it shows us an immoveable Being; Empedocles, because it makes the union and separation of material substances appear as a process of becoming and passing away; Democritus and Anaxagoras, because it cannot reveal the primitive constituents of things. We find in these philosophers no definite principles as to the nature of knowledge which might serve to regulate objective enquiry, in the way that the Socratic demand for knowledge based on conceptions probably served Plato: and though Parmenides and Empedocles in their didactic poems exhort us to the thoughtful consideration of things, and withdrawal from the senses, they do so almost always in an exceedingly vague manner; and it does not follow because such a discrimination finds place in their poems, that in their systems it may not be the consequence instead of the presupposition of their metaphysic. Although, therefore, their metaphysic laid the foundation for the after development of the theory of knowledge, it is not itself, as yet, a theory of knowledge. The pre-Socratic Philosophy is, as to its form, a dogmatism: thought, fully believing in its own veracity, applies itself directly to the object; and the objective view of the world first gives rise to the propositions concerning the nature of knowledge which prepare the way for the later Philosophy of conceptions.

If we ask, lastly, what are the philosophic results of the first period, we find, as has already been pointed out, that the pre-Socratic systems attempted no accurate discrimination between the spiritual and the corporeal. The early Ionian physicists derived everything from matter, which they held to be moved and animated by its own inherent force. The Pythagoreans substitute number for matter; the Eleatics, Being, regarded as invariable Unity: but neither of them, as we have already remarked, distinguished the incorporeal principles as to their essential nature, from the corporeal phenomenon. Consequently, the incorporeal principles are themselves apprehended materially, and so in man, soul and body, ethical and physical, are considered from the same points of view. This confusion is particularly striking in Heracleitus, for in his conception of everliving fire he directly unites primitive matter with motive force and the law of the universe. The Atomistic philosophy is from the outset directed to a strictly material explanation of nature, and therefore neither within man nor without him does it recognise any immaterial element. Even Empedocles cannot have apprehended his moving forces in a purely intellectual manner, for he treats them precisely like the corporeal elements with which they are mingled in things; so too in man the spiritual intermingles with the corporeal; blood is the faculty of thought. Anaxagoras was the first to teach definitely that the spirit is unmixed with any material element; but in Anaxagoras we reach the limit of the ancient Philosophy of Nature. Moreover, according to him, the world-forming spirit operates merely as a force of nature, and is represented in a half sensible form as a more subtle kind of matter. This particular example, therefore, cannot affect our previous judgment of the pre-Socratic Philosophy so far as its general and predominant tendency is concerned.

All these traits lead us to recognise as the characteristic peculiarity of the first period, a preponderance of natural research over introspective reflection; an absorption with the outer world which prevents thought from bestowing separate study on any object besides nature, from distinguishing the spiritual from the corporeal in an exact and definite manner; from seeking out the form and the laws of scientific procedure for themselves. Overborne by external impressions, man at first feels himself a part of nature, he therefore knows no higher problem for his thought than the investigation of nature, he applies himself to this problem, impartially and directly, without stopping previously to enquire into the subjective conditions of knowledge; and even when his investigation of nature itself carries him beyond the sensible phenomena as such, yet he does not advance beyond nature considered as a whole, to an ideal Being, which has its import and its subsistence in itself. Behind the sensible phenomena, forces and substances are indeed sought which cannot be perceived by the senses; but the effects of these forces are the things of nature, the essences not apprehended by sense are the substance of the sensible itself, and nothing besides; a spiritual world side by side with the material world has not yet been discovered.

How far this description applies also to Sophistic we have already seen. The interest of natural research and the belief in the truth of our presentments are now at an end, but no new road to knowledge and higher reality is as yet pointed out; and far from opposing the kingdom of the spirit to nature, the Sophists regard man himself as a merely sensuous being. Although, therefore, the pre-Socratic natural philosophy is abolished in Sophistic, Sophistic like its predecessors knows of nothing higher than Nature, and has no other material to work on; the change consists not in opposing a new form of science to a previous form, but in making use of the existing elements, particularly the Eleatic and Heracleitean doctrines, to introduce doubt into scientific consciousness, and to destroy belief in the possibility of knowledge.

Thus we are compelled, by the results of our investigation, to bring the three oldest schools of Philosophy—the Ionian, the Pythagorean, and the Eleatic—into a closer connection than has hitherto been customary. They are not only very near to each other in respect to time, but are much more alike in their scientific character than might at first sight be supposed. While they agree with the whole of the early Philosophy in directing their enquiries to the explanation of nature, this tendency is in their case more particularly shown in a search for the substantial ground of things: in demanding what things are in their proper essence, and of what they consist; the problem of the explanation of Becoming, and passing away, of the movement and multiplicity of phenomena is not as yet distinctly grasped. Thales makes all things originate and consist in water, Anaximander in infinite matter, Anaximenes in air; the Pythagoreans say that everything is Number; the Eleatics that the All is one invariable Being. Now it is true that the Eleatics alone, and they only subsequently to Parmenides, denied movement and Becoming, whereas the Ionians and the Pythagoreans minutely describe the formation of the world. But they neither of them propounded the question of the possibility of Becoming and of divided Being in this general manner, nor in the establishment of their principles did they attempt particular definitions in regard to it. The Ionians tell us that the primitive matter changes; that from matter, originally one, contrary elements were separated and combined in various relations to form a world. The Pythagoreans say that magnitudes are derived from numbers, and from magnitudes, bodies; but on what this process was based, how it came about that matter was moved and transmuted, that numbers produced something other than themselves,—they make no scientific attempt to explain. What they seek is not so much to explain phenomena from general principles, as to reduce phenomena to their first principles. Their scientific interest is concerned rather with the identical essence of things, the substance of which all things consist, than with the multiplicity of the phenomena and the causes of that multiplicity. When the Eleatics, therefore, entirely denied the Becoming and the Many they merely called in question an unproved presupposition of their predecessors; and in apprehending all reality as a unity absolutely excluding multiplicity, they only carried out more perfectly the tendency of the two older schools. Heracleitus was the first to see in motion, change, and separation, the fundamental quality of the primitive essence; and the polemic of Parmenides first occasioned Philosophy to enquire more thoroughly into the possibility of Becoming.[1] With Heracleitus, then, philosophic development takes a new direction : the three older systems, on the contrary, fall together under the same class, inasmuch as they are all satisfied with the intuition of the substance of which things consist, without expressly seeking the cause of multiplicity and change, as such. This substance was sought by the Ionians in a corporeal matter, by the Pythagoreans in number, by the Eleatics in Being as such. By the first it was apprehended sensuously, by the second mathematically, by the third metaphysically; but these differences only show us the gradual development of the same tendency in a progression from the concrete to the abstract; for number and mathematical form are a middle term between the sensible and pure thought; and were afterwards regarded, by Plato especially, as their proper connecting link.

The turning-point which I here adopt in the development of the pre-Socratic Philosophy has been already remarked by other historians in respect of the Ionian schools. On this ground Schleiermacher[2] first distinguished two periods in the Ionian Philosophy, the second of which begins with Heracleitus. Between this philosopher and his predecessors, he says, there is a considerable chronological gap, probably in consequence of the interruption occasioned to philosophic pursuits by the disturbances in Ionia. Moreover, while the three most ancient Ionians came from Miletus, Philosophy now spreads itself geographically over a much wider sphere. Also, in the content of his philosophy, Heracleitus rises far above the earlier physicists, so that he may, perhaps, have derived little from them. Ritter,[1] too, acknowledges that Heracleitus differs in many respects from the older Ionians, and that his theory of the universal force of nature places him quite in a separate order from them. Brandis,[2] in still closer agreement with Schleiermacher, holds that with Heracleitus commences a new period in the development of the Ionian Philosophy, to which, besides Heracleitus, Empedocles, Anaxagoras, Leucippus, Democritus, Diogenes, and Archelaus likewise belong; all these being distinguished from the earlier philosophers by their more scientific attempts to derive the multiplicity of particulars from a primitive cause, by their more explicit recognition or denial of the distinction between spirit and matter, as also of a Divinity that forms the world; and by their common endeavour to establish the reality of particulars and their variations in opposition to the doctrine of the Eleatic One. These remarks are quite true, and only, perhaps, open to question with regard to Diogenes of Apollonia. But it is not enough to make this difference the dividing-line between two classes of Ionic physiologists; it is deeply rooted in the whole of the pre-Socratic Philosophy. Neither the doctrine of Empedocles, nor that of Anaxagoras, nor that of the Atomists can be explained by the development of the Ionian physiology as such; their relation to the Eleatics is not the merely negative relation of disallowing the denial of Reality, Becoming, and Multiplicity; they *positively* learned a good deal from the Eleatic school. They all acknowledge the great principle of the system of Parmenides, that there is no Becoming or passing away in the strict sense of the terms; consequently they all explain phenomena from the combination and separation of material elements, and they in part borrow their concept of Being directly from the Eleatic metaphysics. They ought, therefore, to be placed after the Eleatic school, and not before it. In regard to Heracleitus, it is less certain whether, or how far, he concerned himself with the beginnings of the Eleatic Philosophy; in point of fact, however, his position is not only entirely antagonistic to the Eleatics, but he may generally be said to enter upon a new course altogether divergent from that hitherto followed. In denying all fixedness in the constitution of things, and recognising the law of their variability as the only permanent element in them, he declares the futility of the previous science which made matter and substance the chief object of enquiry; and asserts the investigation of the causes and laws which determine Becoming and Change to be the true problem of Philosophy. Thus, although the question as to the essence and material substance of things was not overlooked by Heracleitus and his followers, any more than the account of the formation of the world was omitted by the Ionians and Pythagoreans, the two elements stand with each of them in a very different relation. In the one case, the enquiry as to the substance of things is the main point, and the notions about their origin are dependent upon the answer given to this question; in the other, the chief question is that of the causes of Becoming and Change, and the manner of conceiving the original substance of Being depends upon the determinations which appear necessary to the philosopher to explain Becoming and Change. The Ionians make things arise out of the rarefaction and condensation of a primitive matter, because this best adapts itself to their notion of primitive matter; the Pythagoreans hold to a mathematical construction, because they reduce everything to number; the Eleatics deny Becoming and Motion, because they find the essence of things in Being alone. On the contrary, Heracleitus makes fire the primitive matter, because on this theory only can he explain the flux of all things; Empedocles presupposes four elements and two moving forces; Leucippus and Democritus presuppose the atoms and the void, because the multiplicity of phenomena seems to them to require a multiplicity of material primitive elements, and the change in phenomena a moving cause; Anaxagoras was led by similar considerations to his doctrine of the ὁμοιομερῆ and the world-intelligence. Both sets of philosophers speak of Being and Becoming; but in the one case the definitions respecting Becoming appear only as a consequence of their theory of Being; in the other, the definitions of Being are merely presuppositions in the theory of Becoming. In assigning, therefore, the three most ancient schools to a first division of pre-Socratic Philosophy, and Heracleitus, and the other physicists of the fifth century to a second, we follow not merely the chronological order, but the internal relation of these philosophers.

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[1] From this point of view it might seem preferable to commence the second section of the first period with Parmenides, as well as Heracleitus, as my critic in the *Repertorium* of Gersdorf (1844, H. 22, p. 335) proposes, seeing that up to the time of these two philosophers (as he observes) the question, whence all things arose, had been answered by theories of matter, and that Heracleitus and Parmenides were the first to enquire concerning the conception of Being and Becoming. But the connection between Parmenides and Xenophanes would thus be broken ; and as the doctrine of Parmenides, in spite of all its historical and scientific importance, approximates closely in its content and tendency to the earlier systems, it appears on the whole better to make Heracleitus alone the starting-point of the second section.

[2] *Gesch. der Phil.* (*Vorl. v. J.* 1812) p. 33.

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[1] *Gesch. der Phil.* 242, 248; *Ion. Phil.* 65.

[2] *Gr.-röm. Phil.* i. 149.

The course of philosophic development in the second division may be more precisely described as follows:— First, the law of Becoming is proclaimed by Heracleitus unconditionally as the universal law of the world; the reason of which he seeks in the original constitution of matter. The concept of Becoming is next enquired into more particularly by Empedocles and the Atomists. Generation is identified with the union, and decease with the separation of material elements: consequently, a plurality of original material elements is assumed, the motion of which has to be conditioned by a second principle distinct from them; but whereas Empedocles makes his primal elements of matter qualitatively different one from another, and places over against them moving force in the mythical forms of friendship and discord, the Atomists recognise only a mathematical difference between the primitive bodies, and seek to explain their motion in a purely mechanical manner from the operation of weight in empty space; space they consider indispensable, because without it, as they believe, no plurality and no change would be possible. This mechanical explanation of Nature Anaxagoras finds inadequate. He therefore sets spirit beside matter as moving cause, discriminates them one from the other as the compound and the simple, and defines primitive matter as a mixture of all particular matters; a mixture, however, in which these particular matters exist and are already qualitatively determined. Heracleitus explains these phenomena dynamically, from the qualitative change of one primitive matter, which is conceived as essentially and perpetually changing; Empedocles and the Atomic philosophers explain them mechanically, from the union and separation of different primitive matters; Anaxagoras finally is persuaded that they are not to be explained by mere matter, but by the working of the spirit upon matter. At this point, in the nature of the case, the purely physical explanation of nature is renounced; the discrimination of spirit from matter, and the higher rank which it assumes in opposition to matter, demands a recasting of science generally on the basis of this conviction. As, however, Thought is as yet incapable of such a task, the immediate result is that philosophy is bewildered in regard to its general vocation, despairs of objective knowledge, and places itself, as a means of formal development, in the service of the empirical subjectivity which acknowledges the validity of no universal law. This is effected in the third section of the pre-Socratic Philosophy by means of Sophistic.[1]

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[1] Tennemann and Fries adopt this arrangement of the pre-Socratic schools on purely chronological grounds. Hegel bases it on scientific observations concerning the internal relation of the systems. He does not, however, expressly distinguish the two main currents of ancient physics, and, as before noticed, he separates Sophistic from the other pre-Socratic doctrines. It is to be found, too, in Braniss, to whose general presupposition I must nevertheless demur. Among

the more recent writers, Noack, and previously Schwegler, adopt my view; Haym, on the contrary (*Allg. Encyk. Sect.* 3 B. xxiv. p. 25 sqq.), though in harmony with me in other respects, places Heracleitus before the Eleatics. In his history of Greek Philosophy, p. 11 sq. Schwegler discusses: 1, the Ionians; 2, the Pythagoreans; 3, the Eleatics; and 4, Sophistic, as the transition to the second period. He defends the subdivision of the Ionians into earlier and later, for the reasons stated on p. 202 sq.; and assigns to the earlier, Thales, Anaximander, and Anaximenes; to the later, Heracleitus, Empedocles, Anaxagoras, and Democritus. So also Ribbing (*Platon. Ideenlehre*, i. 6 sqq.) considers that since Heracleitus, Empedocles, the Atomists, and Anaxagoras are, in their principles, lower than the Pythagoreans and Eleatics, they, as well as the older Ionians, must be placed before them. Ueberweg has the following division: 1, the older Ionians, including Heracleitus; 2, the Pythagoreans; 3, the Eleatics; 4, Empedocles, Anaxagoras, and the Atomists. The Sophists he places in the second period, of which they form the first chapter; Socrates and his successors, as far as Aristotle, constitute the second; Stoicism, Epicureanism, and Scepticism, the third. I cannot now enter upon any detailed examination of these different classifications. It will be seen in the course of this exposition what are my objections to the theory of Strümpell (*Gesch. der Theoret. Phil. der Griechen*, 1854, p. 17 sq.), in point of chronology as well as the internal aspects of the subject. His exposition of the pre-Socratic Philosophy is as follows: First, the older Ionian Physiologists, starting from the contemplation of the changes in nature, arrive in Heracleitus at the conception of original Becoming. To this doctrine the Eleatics oppose a system which entirely denies Becoming, while contemporaneously the later Physicists, on the one side Diogenes, Leucippus, and Democritus; on the other, Empedocles and Anaxagoras, reduce it to mere motion. A reconciliation of the opposition between Becoming and Being, and between Opinion and Knowledge, was attempted by the Pythagoreans; and Sophistic is a dialectic solution of this opposition. It will suffice at present to say that the position of Heracleitus, the Eleatics, Diogenes, and more especially the Pythagoreans, appear to me more or less misrepresented by this arrangement.

§ I.—THE EARLIER IONIANS, THE PYTHAGOREANS AND ELEATICS.

THE EARLIER IONIAN PHYSICS.[1]

I. *THALES.*[2]

Thales is reputed to be the founder of the Ionian Naturalistic Philosophy. He was a citizen of Miletus, a contemporary of Solon and Crœsus,[3] whose ancestors are said to have immigrated to their later home from Phœnicia, but more probably from Bœotia.[1] The con-

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[1] Ritter, *Gesch. der Ion. Phil.*, 1821. Steinhart, *Ion. Schule, Allg. Encyk.* v.; *Ersch und Gruber*, Sect. II., vol. xxii. 457–490.

[2] Decker, *De Thalete Milesio.* Halle, 1865. Older monographs in Ueberweg, *Grundriss. der Gesch. der Phil.*, i. 35 sq., 3rd edition.

[3] This is beyond question; but the chronology of his life (on which cf. Diels on the Chronicle of Apollodorus, *Rhein. Mus.*, xxxi. 1, 15 sq.) cannot be more precisely fixed. According to Diogenes i. 37, Apollodorus placed his birth in the first year of the 35th Olympiad, i.e. 640–639 B.C. Eusebius places it in the second year of the 35th Olympiad, and Hieronymus also in the 35th Olympiad, *Chron.* 1. But this statement is probably founded only on some approximate calculation of the eclipse of the sun, which Thales is said to have predicted (vide *infr.* p. 213, 3). This is not, as used formerly to be supposed, the eclipse of 610 B.C.; but, according to Airy (*On the Eclipses of Agathocles, Thales, and Xerxes, Philosophical Transactions*, vol. cxliii. p. 179 sqq.); Zech (*Astronomische Untersuchungen der wichtigeren Finsternisse*, &c., 1853, p. 57, with which cf. Ueberweg, *Grundriss der Gesch. der Phil.* i. 36, third edition); Hansen (*Abhandlungen der königl. sächs. Gesellsch. der Wissenschaft.* vol. xi.; *Math. phys.* Kl. vol. vii. p. 379); Martin (*Revue Archéologique, nouv. sér.*, vol. ix. 1864, p. 184), and other authorities, that which occurred on the 28th, or, according to the Gregorian calendar, the 22nd of May, 585 B.C. Pliny, in his Natural History, ii. 12, 53, places it in the fourth year of the 48th Olympiad (584–5 B.C.), 170 A.U.C.; Eudemus ap. Clemens, *Stromata*, i. 302 A, about the fourth year of the 50th Olympiad (580–576); Eusebius in his Chron. in Ol. 49, 3, 582–1; they, therefore, take the second eclipse, which is most accurately calculated by Pliny. About the same time (under the Archon Damasius, 586 B.C.) Demetrius Phalereus ap. Diog. i. 22 makes Thales and the rest to have received their designation of the seven wise men. According to Apollodorus, Diog. i. 38, Thales was 78 years old; (Decker's proposal, p. 18 sq., to substitute 95 does not commend itself to me) according to Sosicrates (*ibid.*), 90; according to Pseudo Lucian (*Macrob.* 18), 100; according to Syncell. (p. 213 C), more than 100. His death is placed by Diogenes, *loc. cit.*, in the 58th Olym-

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piad; likewise by Eusebius, Hieronymus, and Cyrillus, *loc. cit.*; but in that case, as is shown by Diels, and confirmed by Porphyry (ap. *Abulfaradasch*, p. 33, ed. Pococke), his birth cannot have been assigned by Apollodorus to Ol. 35, 1, but to Ol. 39, 1 (624 B.C.; 40 years before the eclipse), and the divergent statements must be ascribed to some ancient corruption of the text in the source consulted by Diogenes. As to the manner of Thales's death and his burial-place, some untrustworthy accounts are to be found in Diog. i. 39. ii. 4; Plut., *Solon*, 12; some epigrams relating to him, in *Anthol.* vii. 83 sq., Diog. 34. Whether the Thales mentioned in Arist. *Polit.* ii. 12, 1274 a, 25, as the scholar of Onomacritus, and the teacher of Lycurgus and Zaleucus, is the Milesian philosopher, or some other person, matters little; and the unfavourable judgment, which, according to Aristotle, ap. Diog. ii. 46 (if, indeed, the statement be his at all), Pherecydes passed upon Thales, is equally unimportant.

[1] Herodotus, i. 170, says of him: Θάλεω ἀνδρὸς Μιλησίου, τὸ ἀνέκαθεν γένος ἐόντος Φοίνικος; Clemens, *Strom.* i. 302 C, simply calls him Φοῖνιξ τὸ γένος; and, according to Diogenes, i. 22, (where, however, Röper, *Philol.* xxx. 563, proposes to read ἐπολιτεύθησαν, and ἦλθον), he seems to have been regarded as a Phœnician immigrant, settled in Miletus. This statement is probably founded on the fact that his ancestors belonged to the Cadmean tribe in Bœotia, who were intermingled with the Ionians of Asia Minor (Herod. i. 146; Strabo, xiv. 1, 3, 12, p. 633, 636; Pausan. vii. 2, 7). According to Pausanias, a great number of Theban Cadmeans established themselves in Priene, for which reason the name of the place was altered to Cadme. Hellanicus in Hesychius *sub voc.* also calls the inhabitants of Priene Καδμῖοι. For Diogenes, i. 22, says: ἦν τοίνυν ὁ Θαλῆς, ὡς μὲν Ἡρόδοτος καὶ Δοῦρις καὶ Δημόκριτός φησι, πατρὸς μὲν Ἐξαμίου, μητρὸς δὲ Κλεοβουλίνης, ἐκ τῶν Θηλιδῶν (or Θηλυδ.) οἵ εἰσι Φοίνικες, εὐγενέστατοι τῶν ἀπὸ Κάδμου καὶ Ἀγήνορος. He thus explains the Φοῖνιξ by 'descendant of Cadmus'; following either Duris or Democritus, or, at any rate, some very trustworthy source. Herodotus, however, shows by the word ἀνέκαθεν that not Thales himself, but only his remote ancestors had belonged to the Phœnicians. If Thales was only in this sense Φοῖνιξ. his nationality, even if the story of the immigration of Cadmus have any foundation in history, is Greek and not Phœnician; nor is this statement affected by the circumstance (vide Schuster, *Acta soc. philol. Lips.* iv. 328 sq.; cf. Decker, *De Thale.*, 9) that the father of Thales perhaps bore a name that was Phœnician in its origin. Diog., *loc. cit.*, and 1, 29, according to our text, calls him in the genitive Ἐξαμίου. For this we must read Ἐξαμύου; and some manuscripts have Ἐξαμύλου or Ἐξαμυούλου, which certainly points to a Semitic extraction. But this Græco-Phœnician name, like that of Cadmus and many others, may

sideration in which he was held by his fellow-citizens is sufficiently shown by the place which he occupies as chief of the seven sages.[1] This has reference in the first instance, it is true, to his practical ability and worldly prudence of which other proofs have come down to us;[2] but we hear also that he distinguished himself by his knowledge of mathematics and astronomy,[3] and that he

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have been kept up centuries long among the Phœnicians settled in Greece. We cannot infer from it a direct Phœnician descent, either for Thales or his father. His mother's name is wholly Greek.

[1] Cf. p. 119 sq.; Timon ap. Diog. i. 34; Cic. *Legg.* ii. 11, 26; *Acad.* ii. 37, 118; Aristophanes, *Clouds*, 180; *Birds*, 1009; Plautus, *Rud.* iv. 3, 64; *Bacch.* i. 2, 14. In *Capt.* ii. 2, 124, Thales is a proverbial name for a great sage. For sayings ascribed to him cf. Diog. i. 35 sqq.; Stobæus, *Floril.* iii. 79, 5; Plutarch, *S. sap. conv.* c. 9.

[2] According to Herodotus, i. 170, he counselled the Ionians, before their subjugation by the Persians, to form a confederation with a united central government to resist them; and, according to Diog. 25, it was he who dissuaded the Milesians from provoking the dangerous enmity of Cyrus by an alliance with Crœsus. It is not consistent with this, and in itself is hardly credible that he should have accompanied Crœsus in his expedition against Cyrus (as Herodotus relates, i. 75), and by planning a canal, should have enabled him to cross the Halys. It is still more incredible that Thales, the first of the seven wise men, should have been such an unpractical theorist, as a well-known anecdote represents him. Plato, *Theætetus*, 174 a; Diog. 34, cf. Arist. *Eth. N.* vi. 7, 1141 b, 3, &c. Little more, however, is to be said for the story of the oil presses, intended to refute this opinion; not to mention the anecdote in Plutarch, *Sol. anim.* c. 13, p. 971. The assertion (Clytus ap. Diog. 25), *μονήρη αὐτὸν γεγονέναι καὶ ἰδιαστήν*, cannot be true in this universal sense; and the stories about his celibacy, for which cf. Plutarch, *Qu. conv.* iii. 6, 3, 3; *Sol.* 6, 7; Diog. 26; Stobæus, *Floril.*, 68, 29, 34, are equally worthless.

[3] Thales is one of the most celebrated of the ancient mathematicians and astronomers. Xenophanes eulogises him in this respect, cf. Diog. i. 23: *δοκεῖ δὲ κατά τινας πρῶτος ἀστρολογῆσαι καὶ ἡλιακὰς ἐκλείψεις καὶ τροπὰς προειπεῖν, ὥς φησιν Εὔδημος ἐν τῇ περὶ τῶν ἀστρολογουμένων ἱστορίᾳ· ὅθεν αὐτὸν καὶ Ξενοφάνης καὶ Ἡρόδοτος θαυμάζει· μαρτυρεῖ δ' αὐτῷ καὶ Ἡράκλειτος καὶ Δημόκριτος.* Phönix ap. Athen. xi. 495, d: *Θαλῆς γάρ, ὅστις ἀστέρων ὀνήϊστος* etc. (others read *ἀστέων*). Strabo, xiv. 1, 7, p. 635: *Θαλῆς . . . ὁ πρῶτος φυσιολογίας ἄρξας ἐν τοῖς Ἕλλησι καὶ μαθηματικῆς.* Apuleius *Floril.* iv. 18, p. 88 *Hild.* Hippolytus *Ref. hær.* i. 1; Proclus *in Euclid.* 19 (vide following note).

was the first to transplant the elements of these sciences

The anecdote quoted from Plato, *Theæt.* 174 A, in the previous note, has reference to his reputation as an astronomer. Among the proofs related of his astronomical knowledge, the best known is the above-mentioned prediction of the eclipse which occurred during a battle between the armies of Alyattes and Cyaxares or Astyages (Herod. i. 74; Eudemus ap. Clem. *Strom.* i. 302 A; Cic. *Divin.* i. 49; 112; Pliny's *Hist. Nat.* ii. 12, 53); it was probably in consequence of this that the prediction and explanation of solar and lunar eclipses generally were ascribed to him. See Diog. *loc. cit.*; Eusebius, *Pr. Ev.* x. 14, 6; Augustine, *Civ. Dei*, viii. 2; Plutarch, *Plac.* ii. 24; Stobæus, *Ecl.* i. 528, 560; Simplicius, in *Categ. Schol. in Arist.* 64 a, 1, 65 a, 30; Ammonius, *ibid.* 64 a, 18; *Schol. in Plat. Remp.* p. 420; Bekk. Cic. *Rep.* i. 16. Theo in the passage taken from Dercyllides, *Astron.* c. 40, p. 324 Mart, and repeated by Anacolius, *in Fabric. Bibl. gr.* iii. 464. The latter says, following Eudemus: Θαλῆς δὲ [εὗρε πρῶτος] ἡλίου ἔκλειψιν καὶ τὴν κατὰ τὰς τροπὰς αὐτοῦ περίοδον [al. πάροδον] ὡς οὐκ ἴση ἀεὶ συμβαίνει. (On this opinion, which we meet with elsewhere, cf. Martin *loc. cit.* p. 48). In partial agreement with this, Diogenes says (i. 24 sq. 27) that Thales discovered τὴν ἀπὸ τροπῆς ἐπὶ τροπὴν πάροδον of the sun, and declared the sun to be 720 times as large as the moon. He, or according to others, Pythagoras, first proved that the triangles constructed on the diameter of a circle are rectangles (πρῶτον καταγράψαι κύκλου τὸ τρίγωνον ὀρθογώνιον); that he perfected the theory of the σκαληνὰ τρίγωνα (Cobet: σκαλ. καὶ τρίγ.), and in general the γραμμικὴ θεωρία; determined the seasons, divided the year into 365 days, measured the height of the pyramids by the length of their shadow (this according to Hieronymus; the same in Pliny, *Hist. Nat.* xxxvi. 12, 82; a little differently in Plutarch *S. sap. conv.* 2, 4, 147); Callimachus ap. Diog. 22 says that he was the first to mark out the constellation of the Little Bear, which is repeated by Theo in *Arati Phæn.* 37, 39, and by the Scholiast of Plato, p. 420, No. 11, Bekker. Proclus asserts that he first showed that the diameter halved the circle (*in Euclid*, 44, 157 Friedl.), and that in an isosceles triangle, the angles at the base are equal (*ibid.* 67 and 250 Friedl.); that the angles at the vertex are equal (*ibid.* 79, a, 299, according to Eudemus); that triangles are equal when they have two angles and one side equal to one another; and that by means of this proposition the distance of ships on the sea could be measured (*ibid.* 92 [352]; this is also on the authority of Eudemus). Apuleius, *Flor.* iv. 18, p. 88 H., says that Thales discovered *temporum ambitus, ventorum flatus, stellarum meatus, tonitruum sonora miracula, siderum obliqua curricula, solis annua reverticula* (the τροπαί, the solstices of which Theo and Diogenes in the previously quoted passages, the Scholiast on Plato, p. 420 Bekk., speak); also the phases and eclipses of the moon, and a method of determining *quotiens sol magnitudine sua circulum, quem permeat, metiatur.* Stobæus ascribes to him into Greece from the countries of the east and south.[1]

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some other philosophical and physical theories hereafter to be mentioned, also the division of the heavens into five zones (*Ecl.* i. 502, Plutarch, *Plac.* ii. 12, 1); the discovery that the moon is illuminated by the sun (*ibid.*, 556, *Plac.* ii. 28, 3), the explanation of her monthly obscuration, and of her eclipses, 560. Pliny, *Hist. Nat.* xviii. 25, 213, mentions a theory of his about the Pleiades, and Theo in *Arat.* 172, a passage relative to the Hyades. According to Cicero, *Rep.* i. 14, he made the first celestial globe; and, according to Philostratus, *Apoll.* ii. 5, 3, he observed the stars from Mycale. How much of these reports is true cannot now be ascertained; that the prediction of the eclipse of the sun cannot be historical, Martin shows in the *Revue Archéologique, nouv. sér.* vol. ix. (1864) 170 sqq.; cf. especially p. 181 sq.

[1] Arithmetic, says Proclus, *in Euclid.* 19, o [65] was discovered by the Phœnicians; Geometry by the Egyptians, on the occasion of the overflowing of the Nile, *Θαλῆς δὲ πρῶτον εἰς Αἴγυπτον ἐλθὼν μετήγαγεν εἰς τὴν Ἑλλάδα τὴν θεωρίαν ταύτην, καὶ πολλὰ μὲν αὐτὸς εὗρε, πολλῶν δὲ τὰς ἀρχὰς τοῖς μετ' αὐτὸν ὑφηγήσατο.* Whence Proclus got this information he does not state, and though it is not improbable that Eudemus may be his authority, we know not whether the whole account comes from that source, nor who may be the authorities of Eudemus. Thales's Egyptian journey, his intercourse with the priests of that country, and the mathematical knowledge which he gained from them are spoken of by Pamphile and Hieronymus, ap. Diog. 24, 27; the author of the letter to Pherecydes, *ibid.* 43; Pliny, *Hist. Nat.* xxxvi. 12, 82; Plutarch, *De Is.* 10, p. 354; *S. sap. conv.* 2, p. 146; *Plac.* i. 3, 1; Clemens, *Stromata*, i. 300 D, 302; Iamblichus *v. Pythag.* 12; *Scholiast in Plato*, p. 420, No. 11 Bekk. (cf. Decker, *loc. cit.*, p. 26 sq.), a conjecture as to the reason of the overflowings of the Nile was also attributed to Thales, and may perhaps be connected with this statement (Diodor. i. 38; Diog. i. 37). If it be true that Thales was engaged in trade (Plutarch, *Sol.* 2, asserts this, prefixing '*φασίν*'), we might suppose that he was first led to Egypt by his commercial journeys, and then made use of his opportunity for the advancement of his knowledge. We cannot, however, regard his presence in Egypt as absolutely proved, probable as the assertion may be; since the tradition on the subject cannot be traced further back than Eudemus, whose date is still 250 or 300 years from that of Thales's supposed journey, still less can his acquaintance with the Chaldæans be proved by such late and uncertain testimony as that of Josephus, *Contra Apionem*, i. 2; or the length of his stay in Egypt by that of the *Placita* falsely attributed to Plutarch (i. 3, 1). A scholium (*schol. in Ar.* 533, a, 18) states that he was sent for into Egypt as a teacher of Moses—a specimen of the manner in which history was manufactured in the Byzantine period and even earlier. That he derived philosophical and physical theories from the East, as well as geometrical and mathematical knowledge, is not asserted by any

That he inaugurated the school of ancient physicists is affirmed by Aristotle,[1] and seems well established. He is at any rate the first whom we know to have instituted any general enquiry into the natural causes of things, in contradistinction to his predecessors, who contented themselves partly with mythical cosmogonies, and partly with isolated ethical reflections.[2] In answer to

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of our witnesses, except perhaps Iamblichus and the author of the *Placita*. Röth's attempt (*Gesch. der Abendl. Phil.* ii. a, 116 sqq.) to prove this from the affinity of his doctrine with that of Egypt, falls to the ground so soon as we ascribe to Thales, only what there is good reason for ascribing to him.

[1] *Metaph.* i. 3, 983 b, 20. Bonitz, in commenting on this passage, rightly reminds us that it is not Greek Philosophy in general, but only the Ionian Physics, the origin of which is here attributed to Thales. Theophrastus says (*ap.* Simp. *Phys.* 6 a, m), but only as a conjecture, that there must have been physicists before Thales, but that his name caused them all to be forgotten. Plutarch, on the other hand (*Solon*, c. 3, end), remarks that Thales was the only one of his contemporaries who extended his enquiry to other than practical questions (*περαιτέρω τῆς χρείας ἐξικέσθαι τῇ θεωρίᾳ*). Similarly Strabo (*sup.* p. 213, 3) Hippolyt. *Refut. Hær.* i. 1; Diog. i. 24. The assertion of Tzetzes (*Chil.* ii. 869, xi. 74) that Pherecydes was the teacher of Thales has no weight, and is besides contradicted by the chronology.

[2] Thales does not appear to have committed his doctrines to writing. (Diog. i. 23, 44; Alex. *in Metaph.* i. 3, p. 21, Bon. Themist. *Or.* xxvi. 317, B; Simplicius, *De an.* 8 a, cf. Philop. *De an.* C 4; Galen. *in Hipp. de Nat.* hom. i. 25, end, vol. xv. 69 Kühn.) Aristotle always speaks of him from some uncertain tradition, or from his own conjecture (*Metaph.* i. 3, 983 b, 20 sqq., 984 a, 2; *De cœlo*, ii. 13, 294 a, 28; *De an.* i. 2, 405 a, 19, c. 5, 411 a, 8; *Polit.* i. 11, 1259 a, 18, cf. Schwegler, *in Metaph.* i. 3); similarly Eudemus, ap. Proclus *in Euclid.* 92 (352). Röth (*Gesch. der Abendl. Phil.* ii. a, iii.) concludes that the supposed Thalesian writings must be genuine, because of their agreement with the propositions attributed to Thales. This is a strange inference, for in the first place he himself only considers two of the writings authentic; and as to the contents of these two, nothing has been handed down to us. These writings are the *ναυτικὴ ἀστρολογία* and the treatise *περὶ τροπῆς*. In the second place it is obvious that traditions about Thales's doctrine might as easily have been taken from spurious writings, as, on the other hand, the authors of such writings might have taken advantage of floating traditions. Among the works ascribed to Thales the *ναυτικὴ ἀστρολογία* (mentioned by Diog. 23, Simpl. *Phys.* 6 a, m) seems to have

this enquiry, he declared water to be the matter of which all things consist, and from which they must have arisen.[1] As to the reasons of this theory, nothing was known by the ancients from historical tradition. Aristotle[2] indeed says that Thales may have been led to it

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been the oldest. According to Simplicius, it was his only work. Diogenes says it was held to be a work of Phocus the Samian. According to Plutarch (*Pyth. orac.* 18, p. 402), who considers it genuine, it was written in verse; it seems to be intended by the ἔπη, mentioned in Diog. 34. Whether the poem, περὶ πετεώρων, ascribed to him by Suidas (Θαλ.), is or is not identical with the ναυτικὴ ἀστρολογία, cannot be ascertained. Two other works, which many writers consider to be his only writings, περὶ τροπῆς καὶ ἰσημερίας, are quoted in Diog. 23 (cf. Suidas). The Pseudo-Galen (*In Hippocr. De humor.* i. 1, 1, vol. xvi. 37, K) quotes a work, περὶ ἀρχῶν; but this testimony is itself sufficient to prove that the work is not authentic. Neither the verse quoted Diog. 35 (cf. Decker, p. 46 sq.), nor the letter (*ibid.* 343 sq.) can be considered as genuine. To which of these writings Augustine refers in *Civ. D.* viii. 2 (where he asserts that Thales left books of instruction) it is not of much consequence to know. The same may be said of the doubtful allusions to books of his in Josephus (*C. Apion.* i. 2), and of the quotations in Seneca, *Nat. qu.* iii. 13, 1, 14. 1; iv. 2, 22; vi. 6, 1; Plutarch, *Plac.* i. 3; iv. 1; Diodorus, i. 38; *Schol. in Apoll. Rhod.* iv. 269.

[1] Arist. *Metaph.* i. 3, 983 b, 20: Θαλῆς μὲν ὁ τῆς τοιαύτης ἀρχηγὸς φιλοσοφίας ὕδωρ εἶναί φησιν [sc. στοιχεῖων καὶ ἀρχὴν τῶν ὄντων] Cic. *Acad.* ii. 37, 118: *Thales . . . ex aqua dicit constare omnia*, and many others (a list of these is given in Decker, p. 64). We find in Stobæus, *Ecl.* i. 290, and almost word for word in Justin. *Coh. ad Gr.* c. 5; Plut. *Plac.* i. 3, 2, the expression: ἀρχὴν τῶν ὄντων ἀπεφήνατο τὸ ὕδωρ, ἐξ ὕδατος γάρ φησι πάντα εἶναι καὶ εἰς ὕδωρ ἀναλύεσθαι; but this is taken from Aristotle, who, shortly before the words just now quoted, says that most of the ancient philosophers knew only of material causes: ἐξ οὗ γὰρ ἔστιν ἅπαντα τὰ ὄντα καὶ ἐξ οὗ γίγνεται πρῶτον καὶ εἰς ὃ φθείρεται τελευταῖον . . . . τοῦτο στοιχεῖον καὶ ταύτην ἀρχήν φασιν εἶναι τῶν ὄντων. Aristotle is, therefore, in reality our only source for the knowledge of Thales's proposition.

[2] *Loc. cit.* z. 22: λαβὼν ἴσως τὴν ὑπόληψιν ἐκ τοῦ πάντων ὁρᾷν τὴν τροφὴν ὑγρὰν οὖσαν καὶ αὐτὸ τὸ θερμὸν ἐκ τούτου γιγνόμενον καὶ τούτῳ ζῶν . . . καὶ διὰ τὸ πάντων τὰ σπέρματα τὴν φύσιν ὑγρὰν ἔχειν, τὸ δ' ὕδωρ ἀρχὴν τῆς φύσεως εἶναι τοῖς ὑγροῖς. By θερμὸν is not to be understood (as by Brandis, i. 114) warmth generally, including that of the stars (see following note); it relates to the vital heat of animals, to which πάντων is limited by the context.

through observing that the nourishment of all animals is moist, and that they all originate from moist germs; but this he expressly states to be merely his own conjecture. It is only by later and less accurate authors that the conjecture of Aristotle is asserted as a fact, with the farther additions that plants draw their nourishment from water, and the stars themselves from damp vapours; that all things in dying dry up, and that water is the all-organising and all-embracing element;[1] that we must assume one primitive matter, because otherwise it would be impossible to explain the transformation of the elements one into another; and that that one matter must be water, because everything is derived from water, by means of rarefaction and condensation.[2] All this makes it difficult for us to come to any definite conclusion on the subject. It is possible that the Milesian philosopher may have been influenced by the considerations that Aristotle supposes; he may have started from the observation that everything living arises from a liquid, and in decaying, returns to a liquid state; but other observations may likewise have conduced to this theory, such as the formation of solid ground from alluvion, the fertilising power of rain and of streams, the numerous animal population of the waters; in conjunction with such observations, the old myth of Chaos and of Oceanos, the father of the gods, may also have had some effect on him; but the exact state of the case cannot be ascertained. Nor can we say whether he conceived his primitive watery matter as infinite; for the assertion of Simplicius[1] is manifestly based upon the Aristotelian passage which he is elucidating;[2] and this passage does not mention Thales. It does not even affirm that any one of the philosophers who held water to be the primitive matter, expressly attributed the quality of infinity to that element. Supposing such an assertion had been made, it would be more reasonable to refer it to Hippo (*vide infra*) than to Thales, for the infinity of matter is elsewhere universally regarded as a conception first entertained by Anaximander; Thales most likely never raised such a question at all.

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[1] Plut. *Plac.* i. 3, 2 sq. (so Eusebius, *Pr. Ev.* xiv. 14, 1, and in essential agreement with this, Stobæus, *loc. cit.*); Alex. *ad Metaph.* 983 b, 18; Philoponus, *Phys.* A, 10; *De an.* A, 4 a; Simplicius, *Phys.* 6 a, 8 a; *De cælo* 273 b, 36; Karst. *Schol. in Arist.* 514 a, 26. It has been already shown by Ritter, i. 210, and Krische (*Forschungen auf dem Gebiete der alten Philosophie*, i. 36) that Simplicius is here speaking only from his own conjecture or that of others, that the subsequent passage where he refers to Theophrastus does not relate to the reasons of the system of Thales, and that we have consequently no right to conclude (as Brandis does, i. 111 sqq.) the existence of trustworthy documents concerning Thales's reasoning from the supposed agreement of Aristotle and Theophrastus.

[2] Galen. *De Elem. sec. Hoppocr.* i. 4, vol. i. 442, 444, 484, speaking simultaneously of Thales, Anaximenes, Anaximander, and Heracleitus. It was in truth Diogenes of Apollonia (vide *infra*) who first proved the unity of matter by the transformation of the elements.

He is said to have discriminated[3] from water, as primitive matter, the deity or spirit which permeates this matter, and from it forms the world.[1] Aristotle,[2] however, expressly denies that the ancient physiologists, among whom Thales stands first, distinguished the moving cause from matter; or that any other philosopher except Anaxagoras (and, perhaps, before him Hermotimus) had brought forward the doctrine of an intelligence organising the world. How could Aristotle have used such language if he had known that Thales named God the reason of the world? But if he did not know it, we may be sure that the assertions of later writers are not based upon historical tradition. Moreover, the doctrine which is attributed to Thales entirely accords with the Stoic theology;[3] the very expression in Stobæus appears to be borrowed from the Stoic terminology;[4] Clemens of Alexandria,[5] and Augustine,[6] distinctly declare that neither Thales nor the physicists who succeeded him regarded God or the Divine Spirit as the framer of the universe, but that Anaxagoras was the first to hold this doctrine. We may, therefore, certainly conclude that the opposite theory is an error of the post-Aristotelian period, the source of which we shall presently find in some passages of Aristotle. It by no means follows from this that Thales personally believed in no god or gods;[1] but the tradition that credits him with the thesis that God is the oldest of all things, because He has had no beginning, is not very trustworthy. For this assertion is no better attested than the innumerable other apophthegms ascribed to the seven sages, and was probably attributed to Thales originally in some collection of their sayings in the same arbitrary manner that other sayings were attributed to the rest. Moreover, Xenophanes is elsewhere invariably considered as the first who, in opposition to the Hellenic religion, declared the Deity to have had no beginning. According to certain authors, Thales taught that the world is full of gods. This statement is much more probable than the preceding.[2] But what are we to understand by the expression, the diffusion of the soul throughout the universe? Aristotle's cautious 'perhaps' shows us how little such an interpretation is supported by tradition. Indeed, it may safely be asserted that not only later writers, but Aristotle himself, in his own way, ascribed notions to Thales which we have no right to expect from him. That he conceived all things as living, and personified all active forces after the analogy of the human soul, is certainly probable, because this is in harmony with the imaginative view of nature which everywhere, and especially among the Greeks, precedes scientific enquiry: it is, therefore, quite credible that he may (as Aristotle affirms) have attributed a soul to the magnet,[1] on account of its power of attraction—that is to say, regarded it as a living being. In the same manner, doubtless, he conceived his primitive matter as living, so that, like the ancient Chaos, it could beget all things by itself, without the intervention of an organising spirit. It is also entirely consonant with ancient Greek thought that he should see present deities in the forces of nature, and a proof in the life of nature, that nature is full of gods. But we cannot believe that he combined the several powers of nature, and the souls of separate beings, in the notion of a world-soul; for that notion presupposes that the infinite multiplicity of phenomena has become a unity in the conception of the world; and that efficient power

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[1] *Phys.* 105 b, m: *οἱ μὲν ἕν τι στοιχεῖον ὑποτιθέντες τοῦτο ἄπειρον ἔλεγον τῷ μεγέθει, ὥσπερ Θαλῆς μὲν ὕδωρ*, etc.

[2] *Phys.* iii. 4, 203 a, 16: *οἱ δὲ περὶ φύσεως ἅπαντες ἀεὶ ὑποτιθέασιν ἑτέραν τινὰ φύσιν τῷ ἀπείρῳ τῶν λεγομένων στοιχείων, οἷον ὕδωρ ἢ ἀέρα ἢ τὸ μεταξὺ τούτων.*

[3] The question there is (*loc. cit.*) not whether primitive matter is infinite, but whether the infinite is the predicate of a body from which it is distinguished, or is to be held (with Plato and the Pythagoreans) as something self-dependent, existing for itself. Aristotle, therefore, does not say all the Physicists regard primitive matter as infinite, but all give to the infinite some element as substratum; and this he could very well say even if certain physicists had not expressly mentioned the affinity of the first principle. The word *ἅπαντες* is limited by the context to those Physicists who admit an *ἄπειρον*.

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[1] Cic. *N. De.* i. 10, 25. Thales . . . *aquam dixit esse initium rerum, Deum autem eam mentem, quæ ex aqua cuncta fingeret*, a statement which, as Krische observes (*Forschungen*, 39 sq.), is the same in substance, and is apparently taken originally from the same source as that of Stobæus (*Ecl.* i. 56): *Θαλῆς νοῦν τοῦ κόσμου τὸν θεὸν*, and the similar passage in Plut. *Plac.* i. 7, 11 (consequently we must not in Eus. *Pr. Ev.* xiv. 16, 5, read with Gaisford: *Θαλῆς τὸν κόσμον εἶναι θεὸν*, but *νοῦν τοῦ κόσμου θεόν*). Athenag. *Supplic.* c. 21; Galen, *Hist. Phil.* c. 8, p. 251; *Kühn*.

[2] Cicero, *loc. cit.* cf. Stobæus, *loc. cit.*: *τὸ δὲ πᾶν ἔμψυχον ἅμα καὶ δαιμόνων πλῆρες· διήκειν δὲ καὶ διὰ τοῦ στοιχειώδους ὑγροῦ δύναμιν θείαν κινητικὴν αὐτοῦ.* Philoponus, *De An.* C. 7 u. makes Thales to have said: *ὡς ἡ πρόνοια μέχρι τῶν ἐσχάτων διήκει καὶ οὐδὲν αὐτὴν λανθάνει.*

[3] *Metaph.* i. 3, 984 a, 27 b. 15.

[4] God is described, for example by Seneca (*Nat. qu. prol.* 13) as the *mens universi*; by Cleanthes (vide Tertullian, *Apologet.* 21) as the *spiritus permeator universi*; by Stobæus, *Ecl.* i. 178, as *δύναμις κινητικὴ τῆς ὕλης*; by Diogenes, vii. 138, as *νοῦς*, which pervades all things (*διήκειν*).

[5] *Strom.* ii. 364 C; cf. Tert. c. *Marc.* i. 13, *Thales aquam* (*Deum pronuntiavit*).

[6] *Civ. D.* viii. 2.

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[1] Plut. *S. sap. conv.* c. 9; Diog. i. 35; Stobæus, *Ecl.* i. 54. This is no doubt the meaning also of the statements in Clemens, *Strom.* v. 595 A (and Hippolyt. *Refut. hær.* i. 1), according to which Thales replied to the question: τί ἐστι τὸ θεῖον; τὸ μήτε ἀρχὴν μήτε τέλος ἔχον. For immediately after, another saying of Thales is quoted concerning the omniscience of God (the same given in Diog. 36 and Valer. Max. vii. 2, 8). Consequently, the impersonal θεῖον has here the same significance as the personal θεός. Tertullian (*Apologet.* c. 46) transfers Cicero's story (N. D. i. 22, 60) about Hiero and Simonides to Crœsus and Thales; but this is a mere oversight.

[2] Arist. *De An.* i. 5, 411 a, 7: καὶ ἐν τῷ ὅλῳ δέ τινες αὐτὴν [τὴν ψυχὴν] μεμῖχθαί φασιν, ὅθεν ἴσως καὶ Θαλῆς ᾠήθη πάντα πλήρη θεῶν εἶναι. Diog. i. 27: τὸν κόσμον ἔμψυχον καὶ δαιμόνων πλήρη. Similarly Stobæus (vide *supra*, p. 220, 2). The same proposition is also applied in a moral sense (Cicero, *Legg.* ii. 11, 26).

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[1] *De An.* i. 2, 405 a, 19: ἔοικε δὲ καὶ Θαλῆς ἐξ ὧν ἀπομνημονεύουσι κινητικόν τι τὴν ψυχὴν ὑπολαβεῖν, εἴπερ τὸν λίθον ἔφη ψυχὴν ἔχειν, ὅτι τὸν σίδηρον κινεῖ. Diog. i. 24: Ἀριστοτέλης δὲ καὶ Ἱππίας φασὶν αὐτὸν καὶ τοῖς ἀψύχοις διδόναι ψυχὰς τεκμαιρόμενον ἐκ τῆς μαγνήτιδος καὶ τοῦ ἠλέκτρου. Cf. Stob. *Ecl.* i. 758: Θαλῆς καὶ τὰ φυτὰ ἔμψυχα ζῷα.

is distinguished from matter and conceived as analogous to the human spirit, not only in particular individuals, where this is natural in the simpler stages of opinion, but in the universe generally. Both ideas seem to lie beyond the first narrow limits of early philosophy, and the historical evidence does not justify us in attributing them to Thales.[1] We may conclude, therefore, that while he conceived his primitive matter as living and generative, while he shared the religious faith of his people, and applied it to the consideration of nature, he knew nothing of a world-soul or of a spirit permeating matter and forming the universe.[2]

As to the manner in which things originated from water, Thales seems to be silent. Aristotle certainly says that the physicists, who hold one qualitatively determined primitive matter, make things arise out of it by rarefaction and condensation,[3] but it does not follow that all these philosophers without exception were of that opinion.[4] Aristotle might have used the same form of expression if only the majority had held it, and if it appeared to him the most logical theory of derivation. Simplicius [1] is the first who expressly connects Thales with Anaximenes as having adopted this theory; not only, however, does Theophrastus disagree with him, but Simplicius tells us himself that his statement is only based upon the general bearing of Aristotle's words.[2] What is said by Galen [3] in a passage of doubtful connection, and also by other writers,[4] in a similar strain, is most likely taken from the same source. It is most probable, on the whole, therefore, that Thales never entertained the question, but contented himself with the indefinite notion that things arose or were produced out of water.

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[1] Plut. *Plac.* ii. 1, 2: Θαλῆς καὶ οἱ ἀπ' αὐτοῦ ἕνα τὸν κόσμον cannot of course be taken as historical evidence.

[2] Some such answer must also be given to the question which, in the last century, was so vigorously debated, but which is now almost wholly neglected, whether Thales was a Theist or an Atheist. The truth is no doubt that he was neither one nor the other; neither in his religious faith nor his philosophy; his religion is Greek polytheism, his philosophy is pantheistic hylozoism.

[3] *Phys.* i. 4, at the commencement: *ὡς δ' οἱ φυσικοὶ λέγουσι δύο τρόποι εἰσίν. οἱ μὲν γὰρ ἓν ποιήσαντες τὸ ὂν σῶμα τὸ ὑποκείμενον . . . . τἆλλα γεννῶσι πυκνότητι καὶ μανότητι πολλὰ ποιοῦντες . . . οἱ δ' ἐκ τοῦ ἑνὸς ἐνούσας τὰς ἐναντιότητας ἐκκρίνεσθαι, ὥσπερ Ἀναξίμανδρός φησιν.*

[4] Heracleitus, for instance, regarded things as arising out of fire, not by rarefaction and condensation, but by transformation.

What we hear from other sources about the doctrine of Thales consists merely of isolated empirical observations or conjectures, or else of statements so imperfectly guaranteed that they cannot be considered authentic. The latter holds good not merely of the various mathematical and astronomical discoveries and moral maxims which are attributed to him,[5] of the assertion [6] that the heavenly bodies are glowing masses, analogous to the earth, that the moon receives her light from the sun,[1] and so forth; but even of the philosophic doctrines of the unity of the world,[2] the infinite divisibility and variability of matter,[3] the unthinkableness of empty space,[4] the four elements,[5] the mixture of matters,[6] the nature and immortality of the soul,[7] the dæmons and the heroes.[8] All these originate with such untrustworthy witnesses, and most of them either directly or indirectly so entirely contradict more credible testimony, that we can attach no value to them whatever. What Aristotle[9] gives as a tradition is more likely to be true,—viz. that Thales supposed the earth to float on the water; for this would harmonise perfectly with the theory of the earth's origin from water, and easily adapt itself to the old cosmological notions: we may also connect with it the further statement[1] that he explained earthquakes by the movement of the water. This last assertion, however, seems to rest entirely on one of the writings falsely ascribed to Thales, and doubtless the ultimate source of other doctrines that have been attributed to him. The statement of Aristotle is better attested, but we gain little information, even from him, as to the doctrine of Thales as a whole.[2] All that we know of it may, in fact, be reduced to the proposition that water is the matter out of which everything arises and consists. The reasons that determined him to this theory can only now be conjectured; how he more closely defined the process of the origination of things from water is also very uncertain; but it is most probable that he considered primitive matter, like nature in general, to be animate, and that he held to the indeterminate conception of beginning or generation, without defining this as brought about by the rarefaction or condensation of the primitive matter.

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[1] *Phys.* 39 a: *καὶ οἱ ἓν δὲ καὶ κινούμενον τὴν ἀρχὴν ὑποθέμενοι, ὡς Θαλῆς καὶ Ἀναξιμένης, μανώσει καὶ πυκνώσει τὴν γένεσιν ποιοῦντες.* So 310 a, u, Pseudo-Alex. *in Metaph.* 1042 b, 33, p. 518, 7; Bon. and the anonymous *Schol. in Arist.* 516 a, 14 b, 14.

[2] Simpl. *Phys.* 32 a, u: *ἐπὶ γὰρ τούτου μόνου* [*Ἀναξιμένους*] *Θεόφραστος ἐν τῇ Ἱστορίᾳ τὴν μάνωσιν εἴρηκε καὶ τὴν πύκνωσιν.* (This saying, moreover, ought only to be applied to the ancient Ionians. Theophrastus ascribed also to Diogenes rarefaction and condensation, vide *infra*): *δῆλον δὲ ὡς καὶ οἱ ἄλλοι τῇ μανότητι καὶ πυκνότητι ἐχρῶντο, καὶ γὰρ Ἀριστοτέλης περὶ πάντων τούτων εἶπε κοινῶς*, &c.

[3] Vide *supra*, p. 218, 2.

[4] Hippol. *Refut.* i. 1; Arnob. *Adv. nat.* ii. 10; Philop. *Phys.* C. 1, 14, who, in both passages, so entirely confuses Thales with Anaximenes, that he attributes to Thales the doctrine of air as primitive matter.

[5] Cf. p. 120, and p. 213, 3.

[6] Plut. *Plac.* ii. 13, 1; Achill. Tat. *Isag.* c. 11.

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[1] Plut. *Plac.* ii. 28, 3; Plut. *Conv. sap.* C 15 (ὡς δὲ Θαλῆς λέγει, τῆς γῆς ἀναιρεθείσης σύγχυσιν τὸν ὅλον ἕξειν κόσμον) can hardly be quoted, as the *Banquet* of Plutarch is not a historical work. Moreover, the meaning is doubtless merely that the annihilation of the earth *would* (not *will at some time*) be followed by a destruction of the whole universe.

[2] Plut. *Plac.* ii. 1, 2.

[3] Plut. *Plac.* i. 9, 2; Stob. *Ecl.* i. 318, 348.

[4] Stob. i. 378, where the older reading, ἐπέγνωσαν, recommended by Röth, *Abendl. Phil.* ii. 6, 7, is grammatically inadmissible.

[5] According to the fragment of the spurious writing, περὶ ἀρχῶν (Galen, vide *supra*, p. 216, 2), and perhaps also Heraclit. *Alleg. hom.* c. 22, the four elements are expressly reduced to water. It will hereafter be shown that Empedocles was the first to establish four as the number of the material elements.

[6] Stob. i. 368. In the parallel passage of Plutarch's *Placita*, i. 17, 1, Thales is not named: *οἱ ἀρχαῖοι* is the expression used, which is evidently more correct, and was probably the original expression of Plutarch.

[7] According to Plutarch (*Plac.* iv. 2, 1) and Nemes. (*Nat. hom.* c. 2, p. 28), he described the soul as φύσις ἀεικίνητος ἢ αὐτοκίνητος; according to Theodoret, *Gr. aff. cur.* v. 18, p. 72, as φύσις ἀκίνητος (where, however, ἀεικίνητος possibly ought to be read); an interpolation to which the passage of Aristotle quoted above doubtless gave occasion. Tertullian, *De An.* c. 5 attributes to Thales and to Hippo the theorem that the soul is composed of water. Philoponus, *De An.* c. 7, restricts this to Hippo, while, in another passage, *De An.* A 4, he ascribes it both to Hippo and Thales. Choerilus *ap. Diog.* i. 24, and Suidas, Θαλῆς, says that he was the first to profess belief in immortality.

[8] Athenag. *Supplic.* c. 23; Plut. *Plac.* i. 8.

[9] *Metaph.* i. 3, 983 b, 21; *De Cœlo*, ii. 13, 294 a, 29.

However meagre and insignificant this theory may seem, it was, at least, an attempt to explain phenomena by one general natural principle, and in this light it was of the highest importance; we find that a series of more extended enquiries are directly connected with those of Thales, and that even his immediate successor was able to attain much more considerable results.

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[1] Plut. *Plac.* iii. 15, 1; Hippol. *Refut. hær.* i. 1; Sen. *Nat. qu.* vi. 6; iii. 14. The last, however, seems to refer to a treatise falsely attributed to Thales.

[2] On the other hand, this theory militates against the supposition (Plut. *Plac.* iii. 10) that he held the earth to be spherical, a conception which is foreign to Anaximander and Anaximenes, and even to Anaxagoras and Diogenes.

II. *ANAXIMANDER.*[1]

Whereas Thales had declared water to be the primitive matter of all things, Anaximander[2] defined this original element as the infinite, or the unlimited.[1] By the infinite, however, he did not understand,[2] like Plato and the Pythagoreans, an incorporeal element, the essence of which consists exclusively in infinity; but an infinite matter: the infinite is not subject but predicate, it designates not infinity as such, but an object to which the quality of being infinite belongs. It is in this sense only, says Aristotle,[3] that all the physicists

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[1] Schleiermacher, *Ueber Anaximandros* (1811; *Werke, Philos.* ii. 171 sqq.); Teichmüller, *Studien zur Gesch. der Begr.* 1–70. I regret that I cannot make use of Lyng's treatise, '*Om den Ioniske Naturphilosophi, især Anaximanders*' (*Abdruck aus den Vid. Selskabets Forhandlinger for* 1866), as I am not acquainted with the language in which it is written.

[2] Anaximander was a fellow-citizen of Thales, and also his pupil and successor, according to later authorities (Sext. *Pyrrh.* iii. 30; *Math.* ix. 360; Hippolyt. *Refut. her.* i. 6; Simpl. *Phys.* 6 a, m; Suidas, &c.; this is likewise implied by the epithet *ἑταῖρος*, ap. Simpl. *De Cœlo*, 273 b, 38; *Schol. in Arist.* 514 a, 28; Plut. ap. Eus. *Pr. Ev.* i. 8, 1; of *Sodalis* in Cicero, *Acad.* ii. 37, 118; of *γνώριμος*, in Strabo, i. 1, 11, p. 7; and the latter is actually interchanged with *μαθητής*, *ibid.* xiv. 1, 7, p. 635). According to Apollodorus (Diog. ii. 2) he was sixty-four years old in the second year of the 58th Olympiad, 546–7 B.C., and died soon afterwards, so that his birth must have occurred in Ol. 42, 2 (611 B.C.), or, as Hippolytus (*Refut.* i. 6) thinks, in Ol. 42, 3. Pliny (*Hist. Nat.* ii. 8, 3) says he discovered the inclination of the zodiac. The worth of these statements we cannot certainly estimate; but there is much to be said for the conjecture of Diels (*Rhein. Mus.* xxxi. 24) that Anaximander gave his age in his own work as sixty-four; that Apollodorus (who, according to Diogenes, had this work in his hands), following some internal evidence, calculated that the work was written in Ol. 58, 2; and that the statement of Pliny is based on the same calculation, inasmuch as he found mention of the obliquity of the ecliptic in this work. But Diogenes adds, as a quotation from Apollodorus: *ἀκμάσαντά πη μάλιστα κατὰ Πολυκράτην τὸν Σάμου τύραννον*, which is rather surprising, as Anaximander was considerably older than Polycrates, and died about 22 years before him. Yet we need not, with Diels, *loc. cit.*, assume that these words originally related to Pythagoras (whose *ἀκμὴ* certainly falls under Polycrates, as he is said to have emigrated in his reign when forty years old), for they are also to be explained as the inexact reproduction of an observation of Apollodorus respecting Anaximander. I am inclined to suspect that Apollodorus, in order to get a synchronistic date after the manner of ancient chronologists, had made the *ἀκμὴ* of this philosopher (*πη*) pretty nearly coincide with the commencement of the tyranny of Polycrates, which is

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generally placed in the third year of the 53rd Olympiad, and in the 44th year of Anaximander's life. Eusebius (*Chron.*) assigns Anaximander to the 51st Olympiad. Nothing is known of his personal history, but the statement (Ælian, *V. H.* iii. 17) of his being the leader of the Milesian colony in Apollonia indicates that he filled a distinguished position in his native place. His book, περὶ φύσεως, is said to have been the first philosophical writing of the Greeks (Diog. ii. 2; Themist. *Orat.* xxvi. p. 317 C. When Clemens, *Strom.* i. 308 C, says the same of the work of Anaxagoras, he is evidently confusing him with Anaximander). Brandis rightly observes, however (i. 125), that according to Diogenes, *loc. cit.*, the work must have been rare, even in Apollodorus's time, and Simplicius can only have known it through the quotations of Theophrastus and others. Suidas mentions several writings of Anaximander's, but this is doubtless a misunderstanding; on the other hand, a map of the world is attributed to him (Diog. *loc. cit.*; Strabo, *loc. cit.* after Eratosthenes; Agathemerus, *Geogr. Inf.* 1). Eudemus, ap. Simpl. *De Cœlo*, 212 a, 12 (*Schol. in Arist.* 497 a, 10) says he was the first who tried to determine the sizes and distances of the heavenly bodies. The invention of the sundial was ascribed to Anaximander by Diog. ii. 1, and Eus. *Pr. Ev.* x. 14, 7; and to Anaximenes by Pliny, *Nat. Hist.* ii. 76, 187, in both cases erroneously, as is probable; for the invention, according to Herod. ii. 109, was introduced into Greece by the Babylonians; but it is possible that one of these philosophers may have erected in Sparta the first sundial ever seen there.

[1] Arist. *Phys.* iii. 4, 203 b, 10 sqq.; Simpl. *Phys.* 6 a, and many others; see the following note.

[2] As Schleiermacher, *loc. cit.* p. 176 sq., exhaustively proves.

[3] *Phys.* iii. 4, 203 a, 2: πάντες ὡς ἀρχήν τινα τιθέασι τῶν ὄντων [τὸ ἄπειρον], οἱ μὲν ὥσπερ οἱ Πυθαγόρειοι καὶ Πλάτων, καθ' αὐτὸ, οὐχ ὡς συμβεβηκός τινι ἑτέρῳ, ἀλλ' οὐσίαν αὐτὸ ὂν τὸ ἄπειρον . . . . οἱ δὲ περὶ φύσεως ἅπαντες ἀεὶ ὑποτιθέασιν ἑτέραν τινὰ φύσιν τῷ ἀπείρῳ τῶν λεγομένων στοιχείων, οἷον ὕδωρ ἢ ἀέρα ἢ τὸ μεταξὺ τούτων. Cf. *Metaph.* x. 2, 1053 b, 15. According to the theory of the Physicists the ἓν was not itself a substance, but had some φύσις for its substratum, ἐκείνων γὰρ ὁ μέν τις φιλίαν εἶναί φησι τὸ ἓν ὁ δ' ἀέρα, ὁ δὲ (Anaximander) τὸ ἄπειρον.

speak of the infinite; and among the physicists he unquestionably reckons Anaximander.[1] According to the unanimous testimony of later authors,[2] Anaximander's main argument for his theory was that the infinite, and the infinite alone, does not exhaust itself in constantly producing. This is the very argument that Aristotle quotes[3] as the chief ground for maintaining an infinite corporeal matter; and he does so in speaking of the theory which we recognise as Anaximander's, viz. that the infinite is a body distinct from the determinate elements. From the infinite, Anaximander (whom Aristotle for that reason places beside Empedocles and Anaxagoras) derived particular kinds of matter, and the world which is compounded of them, by means of separation[4] (*Ausscheidung*), a doctrine which would be impossible unless the infinite were itself something material. Lastly, though it is difficult to discover how this philosopher precisely defined his infinite, all testimony is agreed as to its corporeal nature; and among the passages of Aristotle which possibly may refer to Anaximander, and of which some must of necessity refer to him, there is none which does not imply this corporeal nature.[5] That he intended therefore to designate by the infinite a matter infinite as to its mass, cannot be doubted;[1] and it is

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[1] Cf. *loc. cit.* p. 203 b, 13; vide *infra.*

[2] Cic. Acad. ii. 37, 118; Simpl. *De Cœlo*, 273 b, 38; Schol. 514 a, 28; Philop. *Phys.* L, 12 m; Plut. *Placita*, i. 3, 4, and to the same effect Stob. *Ecl.* i. 292: λέγει οὖν διὰ τί ἄπειρόν ἐστιν; ἵνα μηδὲν ἐλλείπῃ, ἡ γένεσις ἡ ὑφισταμένη.

[3] *Phys.* iii. 8, 208, a, 8: οὔτε γὰρ ἵνα ἡ γένεσις μὴ ἐπιλείπῃ, ἀναγκαῖον ἐνεργείᾳ ἄπειρον εἶναι σῶμα αἰσθητόν, cf. c. 4, 203 b, 18, and Plut. *loc. cit.*

[4] Vide *inf.* p. 234, 3, and p. 250.

[5] In our text of Simpl. *Phys.* 32 b, o, we have: ἐνούσας τὰς ἐναντιότητας ἐν τῷ ὑποκειμένῳ ἀπείρῳ ὄντι ἀσώματι ἐκκρίνεσθαί φησιν Ἀναξίμανδρος. Instead of ἀσώματι Schleiermacher, *loc. cit.* 178, proposes to read σώματι. Brandis (*Gr. Röm. Phil.* i. 130) prefers ἀσωμάτῳ; but this could only be

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admitted on the supposition that Simplicius by the *ἀσώματον* here understood that which is not as yet formed into any determinate body. Meanwhile *σώματι* is not merely better sense, but it has also in its favour that Simplicius in the previous context (p. 32 a, *Schol. in Ar.* 334 b, 18) has been speaking of Anaximander's *σῶμα τὸ ὑποκείμενον*; and similarly Aristotle in the passage immediately preceding the one here in question, *Phys.* i. 4, 187 a, 13, speaks of the *σῶμα τὸ ὑποκείμενον*, and elsewhere (vide previous note) of the *ἄπειρον σῶμα αἰσθητόν*. These words signify: 'In the primitive matter conceived; as *ἄπειρον σῶμα*.'

[1] Michelis (*De Anax. Infinito. Ind. lect. Braunsberg*, 1874) indeed asserts the contrary in the tone of one who holds his own infallibility to be indisputable. His arguments, however, seem to me insufficient. He maintains that Aristotle, in a passage never hitherto understood (*Phys.* iii. 4, 204 a, 2 sq.), distinguishes the positive infinite or absolute from the negative infinite, which relates only to the corporeal and the sensible, the former being what Anaximander meant by his *ἄπειρον*. But the passage contains no trace of any such distinction, nor has any writer previously discovered such; it only says that we may either call that an *ἄπειρον*, the measuring of which can never be completed; or that which does not allow of being measured: *τῷ μὴ πεφυκέναι διιέναι, ὥσπερ ἡ φωνὴ ἀόρατος*; in other words (cf. c. 5, 204 a, 12), that which does not fall under the conception of magnitude, and, therefore, can as little be measured or, consequently, limited, as the voice can be conceived of as visible. So understood, the expression *ἄπειρον* has nothing at all to do with the Absolute as such: the *ἄπειρον* in this sense coincides much more with that of which it is said (*Phys.* iii. 4, beginning) that it can neither be called *ἄπειρον* (in the ordinary sense), nor *πεπερασμένον*, as, for instance, the point or the *πάθος*. Michelis himself is forced to allow (p. 7 sq.) that Aristotle never again mentions this 'positive infinite.' How little Aristotle ever thought of it, Michelis might have seen had he studied the passage in *Phys.* i. 2, 185 a, 32 sqq., where, without any restriction, it is asserted of the *ἄπειρον* generally, and not of any particular kind of *ἄπειρον*, that it is to be found *only ἐν τῷ ποσῷ, οὐσίαν δὲ ἄπειρον εἶναι ἢ ποιότητα ἢ πάθος οὐκ ἐνδέχεται εἰ μὴ κατὰ συμβεβηκός, εἰ ἅμα καὶ ποσὰ ἄττα εἶεν*, for the Absolute is *οὐσία*, if it is anything; and such an *οὐσία* that the *ποσὸν* cannot, not even *κατὰ συμβεβηκός*, belong to it. The conception of the Absolute and that of the *ἄπειρον*, according to Aristotle's view, plainly exclude one another; for the Absolute is the perfected energy, pure and simple; the *ἄπειρον*, on the contrary, is what is always unperfected, always *δυνάμει*, never *ἐνεργείᾳ* (*Phys.* iii. 5, 204 a, 20 c. 6, 206 b, 34 sqq; *Metaph.* ix. 6, 1048 b, 14), which, consequently, can be only material cause, and is never employed in any other sense (*Phys.* iii. 7, 207, 4, 34 sqq.; cf.

probably in this sense that we should understand the expression ἄπειρον.[1] He was induced, as we have seen, to determine primitive matter in this way, chiefly by the consideration that primitive matter must be infinite to be able continually to produce from itself new essences. It was easy for Aristotle to show (*loc. cit.*)

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c. 6, 206 a, 18 b, 13). Aristotle, unquestionably therefore, neither himself thought of an immaterial ἄπειρον, nor attributed it to Anaximander. Even in respect of that ἄπειρον, which Michelis wrongly regards as his 'positive Infinite,' he says expressly, *Phys.* iii. 5, 204 a, 13: ἀλλ' οὐχ οὕτως οὔτε φασὶν εἶναι οἱ φάσκοντες εἶναι τὸ ἄπειρον οὔτε ἡμεῖς ζητοῦμεν, ἀλλ' ὡς ἀδιέξοδον. As little can it be said that Aristotle, at any rate, did not ascribe to Anaximander's ἄπειρον, a *corporeal* materiality, for he manifestly does so in the passages quoted, p. 228, 3, and p. 229, 3. Michelis's argument (p. 11), that the passage in *Metaph.* x. 2, 1053 b, 15 (vide *supra*, p. 233, 1) identifies Anaximander with Empedocles (it also identifies him with Anaximenes), and that, according to my view, the same opinion is ascribed to him as to Melissus, proves nothing. We cannot conclude that because the φιλία of Empedocles is not a corporeal matter that therefore Anaximander's ἄπειρον is none; nor can it be pronounced impossible that Melissus should have been led to a determination of Being, which brought him into contact with Anaximander, as Plato was brought with the Pythagoreans by his doctrine of the Unlimited. In fine (p. 11), Aristotle, of whose words, moreover (*Phys.* iii. 4, 203 b, 4), Michelis has a wrong conception, must himself, according to this writer, have distorted Anaximander's doctrine; and all other authorities, especially Theophrastus, in his utterance, quoted p. 233, 1, must be held guilty of the same thing. From this point, however, all possibility of any historic demonstration is at an end, and Michelis substitutes for it a simple sic volo, sic jubeo.

[1] Strümpell (*Gesch. der theor. Phil. der Gr.* 29); Seydel (*Fortschritt der Metaph. innerhalb der Schule des Ion. Hylozoismus*, Leipzig, 1860, p. 10); and Teichmüller (*Studien zur Gesch. der Begr.* 7, 57) believe that the ἄπειρον means with Anaximander that which is qualitatively indeterminate, as distinguished from determinate substances. But the word seems to have first received this signification from the Pythagoreans, and even with them it is a derived signification; the original meaning is 'the Unlimited' (only that the Unlimited, as applied to numbers, is that which sets no limit to division nor to *augmentation*, vide *infra*, *Pyth.*). For Anaximander this signification results partly from the same cause that he assigns for the ἀπειρία of primitive matter (viz., that it would otherwise be exhausted); and partly from this consideration, that it is precisely because of its infinity that the ἄπειρον can embrace all things.

that this proof is not conclusive; but it might nevertheless have appeared sufficient to the unpractised thought of the earliest philosophers,[1] and we must at any rate allow that Anaximander, by maintaining the theory, first raised an important question in philosophy.

So far there is little room for disagreement; but opinions are greatly divided as to the more precise meaning of Anaximander's primitive matter. The ancients are pretty nearly unanimous in asserting that it did not coincide with either of the four elements;[2] according to some it was not a determinate body at all, others describe it as intermediate between water and air, or again between air and fire; while a third account represents it as a mixture of all particular kinds of matter; a mixture in which these have been always contained, as distinct and determinate, so that they can be evolved from it by mere separation, without any change in their constitution. This last theory has formed the basis in modern times[3] of the assertion that among the earlier, no less than among the later Ionic philosophers, there were two classes—the Dynamists and the Mechanists—i.e. those who derived all things from one primitive matter by means of a vital transformation, and those who derived them from a multiplicity of unchanging primitive matters by means of separation and combination in space. To the first belong Thales and Anaximenes, Heracleitus and Diogenes; to the second, Anaximander, with Anaxagoras and Archelaus. We will now examine this theory, since it has an important bearing not only on the doctrine before us, but also on the whole history of ancient Philosophy.

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[1] The same mistake, however, was made by Melissus, and afterwards by the Atomist, Metrodorus; vide *infra*, *Mel.* and *Metrod.*

[2] Authorities will presently be given. The Pseudo-Aristotelian writing, *De Melisso*, &c., c. 2, 975 b, 22, alone maintains that his primitive matter is water (vide *infra*) and in Sextus, *Math.* x. 313, it is said that he made all things arise, ἐξ ἑνὸς καὶ ποιοῦ, namely, air. But although his name is twice mentioned, it seems very probable that the statement may have sprung from the erroneous substitution of Anaximander for Anaximenes, repeated by a copyist from the text of Sextus, or some other author whom he was transcribing. In the *Pyrrh.* iii. 30 he gives a correct account of both these Philosophers.

[3] Ritter, *Gesch. der Ion. Phil.* p. 174 sqq., and *Gesch. der Phil.* i. 201 sq., 283 sqq., where his former concession that Anaxagoras held things to be contained in primitive matter only as to their germ and capability, and not as distinct from each other, is virtually retracted.

Much may be said in its behalf. Simplicius[1] appears to ascribe the same view to Anaximander which we find in Anaxagoras, viz. that in the separation of matters from the infinite, kindred elements become united, gold particles with gold particles, earth with earth, and so on, these different and distinct kinds of matter having been already contained in the original mass. His authority for this statement is supposed to be Theophrastus. We meet with the same view, however, elsewhere,[1] and Aristotle seems to justify it when he describes Anaximander's primitive matter as a mixture.[2] He also expressly mentions him as one of the philosophers who thought particular kinds of matter were developed from the one primitive matter, not by rarefaction and condensation, but by separation.[3] This proves, apparently beyond question, that Aristotle himself conceived this primitive matter of Anaximander as analogous to that of Anaxagoras; for that which has to be separated from matter must previously have been contained in it. But these reasons, on closer inspection, are very insufficient.[4] In regard to the Aristotelian passages, Aristotle himself tells us[5] that he uses the expressions 'separated' and 'contained,' not only where one kind of matter is contained in another actually, but potentially; therefore, when he says that Anaximander represents the particular substances as separating themselves from the primitive matter, it does not at all follow that they were, as these definite substances, included within it. The primitive matter can be equally conceived as the indeterminate essence out of which the determinate is ultimately developed by a qualitative change. As to the comparison of Anaximander with Anaxagoras and Empedocles, it may as easily refer to a remote as to a particular resemblance between their doctrines,[1] and it is the former kind of reference that is intended. In the same way Anaximander's primitive matter might be called *μῖγμα*, or at any rate might be loosely included under this expression (which primarily relates to Empedocles and Anaxagoras), without ascribing to Anaximander the theory of an original mixture of all particular matters in the specific sense of the phrase.[1] We cannot therefore prove that Aristotle ascribed this doctrine to him. Nor does Theophrastus; he expressly says that Anaxa-

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[1] *Phys.* 6 b, u; after a description of Anaxagoras's doctrine of the primitive elements, he proceeds thus: καὶ ταῦτά φησιν ὁ Θεόφραστος παραπλησίως τῷ Ἀναξιμάνδρῳ λέγειν τὸν Ἀναξαγόραν. ἐκεῖνος γάρ φησιν ἐν τῇ διακρίσει τοῦ ἀπείρου τὰ συγγενῆ φέρεσθαι πρὸς ἄλληλα, καὶ ὅ τι μὲν ἐν τῷ παντὶ χρυσὸς ἦν, γίνεσθαι χρυσὸν, ὅ τι δὲ γῆ γῆν, ὁμοίως δὲ καὶ τῶν ἄλλων ἕκαστον, ὡς οὐ γινομένων ἀλλ' ὑπαρχόντων πρότερον. Cf. p. 51 b, u: οἱ δὲ πολλὰ μὲν ἐνυπάρχοντα δὲ ἐκκρίνεσθαι ἔλεγον τὴν γένεσιν ἀναιροῦντες, ὡς Ἀναξίμανδρος καὶ Ἀναξαγόρας. τῆς δὲ κινήσεως καὶ τῆς γενέσεως αἴτιον ἐπέστησε τὸν νοῦν ὁ Ἀναξαγόρας· ὑφ' οὗ διακρινόμενα τούς τε κόσμους καὶ τὴν τῶν ἄλλων φύσιν ἐγέννησαν. 'Καὶ οὕτω μέν, φησι, λαμβανόντων δόξειεν ἂν ὁ Ἀναξαγόρας τὰς μὲν ὑλικὰς ἀρχὰς ἀπείρους ποιεῖν, τὴν δὲ τῆς κινήσεως καὶ τῆς γενέσεως αἰτίαν μίαν τὸν νοῦν· εἰ δέ τις τὴν μῖξιν τῶν ἁπάντων ὑπολάβοι μίαν εἶναι φύσιν ἀόριστον καὶ κατ' εἶδος καὶ κατὰ μέγεθος, συμβαίνει δύο τὰς ἀρχὰς αὐτὸν λέγειν, τὴν τοῦ ἀπείρου φύσιν καὶ τὸν νοῦν· ὥστε φαίνεται τὰ σωματικὰ στοιχεῖα παραπλησίως ποιῶν Ἀναξιμάνδρῳ.' The same words are quoted by Simplicius, p. 33 a, as borrowed from Theophrastus's φυσικὴ ἱστορία.

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[1] Sidonius Apollinaris, *Carm.* xv. 83 sqq., according to Augustine, *Civ. D.* viii. 2; Philoponus, *Phys.* C, 4. In Irenæus *C. hær.* ii. 14. 2, it is not clear what conception of the ἄπειρον he means: '*Anaximander autem hoc quod immensum est omnium initium subjecit* (ὑπέθετο) *seminaliter habens in semetipso omnium genesin.*'

[2] *Metaph.* xii. 2, 1069 b, 20: καὶ τοῦτ' ἐστι τὸ Ἀναξαγόρου ἓν καὶ Ἐμπεδοκλέους τὸ μῖγμα καὶ Ἀναξιμάνδρου.

[3] *Phys.* i. 4: ὡς δ' οἱ φυσικοὶ λέγουσι δύο τρόποι εἰσίν. οἱ μὲν γὰρ ἓν ποιήσαντες τὸ ὂν σῶμα τὸ ὑποκείμενον, ἢ τῶν τριῶν (Water, Air, Fire) τι, ἢ ἄλλο, ὅ ἐστι πυρὸς μὲν πυκνότερον ἀέρος δὲ λεπτότερον, τἆλλα γεννῶσι πυκνότητι καὶ μανότητι πολλὰ ποιοῦντες . . . . οἱ δ' ἐκ τοῦ ἑνὸς ἐνούσας τὰς ἐναντιότητας ἐκκρίνεσθαι, ὥσπερ Ἀναξίμανδρός φησι καὶ ὅσοι δ' ἓν καὶ πολλά φασιν εἶναι ὥσπερ Ἐμπεδοκλῆς καὶ Ἀναξαγόρας· ἐκ τοῦ μίγματος γὰρ καὶ οὗτοι ἐκκρίνουσι τἆλλα.

[4] Cf. Schleiermacher, *op. cit.* p. 190 sq.; Brandis, *Rhein. Mus.* of Niebuhr and Brandis, iii. 114 sqq.; *Gr. Röm. Phil.* i. 132 sq.

[5] *De Cælo*, iii. 3, 302 a, 15: ἔστω δὴ στοιχεῖον τῶν σωμάτων, εἰς ὃ τἆλλα σώματα διαιρεῖται, ἐνυπάρχον δυνάμει ἢ ἐνεργείᾳ . . . . ἐν μὲν γὰρ σαρκὶ ξύλῳ καὶ ἑκάστῳ τῶν τοιούτων ἔνεστι δυνάμει πῦρ καὶ γῆ· φανερὰ γὰρ ταῦτα ἐξ ἐκείνων ἐκκρινόμενα.

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[1] In the passage just quoted, *Phys.* i. 4, Aristotle distinguishes those philosophers who place primitive matter in a determinate body from Anaximander and those, *ὅσοι ἓν καὶ πολλά φασιν*, who maintain that the *ἓν* (the primitive matter) is at the same time one and many, because it is an assemblage of many substances qualitatively distinct. We may indeed question whether Anaximander is to be counted among these latter; the words, *καὶ ὅσοι δ'*, are not conclusive against it; since they may not only be explained, 'and similarly those,' &c., but also, and 'generally speaking, those.' But (cf. Seydel *loc. cit.* p. 13) in the subsequent passage, *ἐκ τοῦ μίγματος*, &c., the *καὶ οὗτοι* cannot include Anaximander, for he is the only person with whom the *οὗτοι* (through the *καὶ*) can be compared, since he alone, not the *ἓν ποιήσαντες τὸ ὂν σῶμα*, taught an *ἔκκρισις* of the *ἐναντιότητες* out of the *ἓν*. If so, however, the philosophers, *ὅσοι ἓν καὶ πολλά φασιν εἶναι*, while they were likened with Anaximander in regard to the *ἔκκρισις*, are at the same time discriminated from him in another respect; he cannot, therefore, be counted among those who consider primitive matter to be *ἓν καὶ πολλά*, and he did not conceive it as a mass of various matters, retaining their qualitative differences in the mixture. Büsgen (*Ueber d. ἄπειρον Anaximanders*, Wiesbaden, 1867, p. 4 sq.) thinks that in this passage Anaximander must be reckoned among those who admit the *ἓν καὶ πολλά*, as there would otherwise be no contrast between him and those who assume one uniform first principle (Anaximenes, &c.); but he misconceives the train of ideas. Anaximander is not placed with Empedocles and Anaxagoras in an opposition to Anaximenes and others, in regard to the Unity or Plurality of primitive substances, but in regard to the manner in which things proceed from them (rarefaction and condensation or separation); it is, however, at the same time pointed out how Anaximander differs from these two philosophers: and subsequently how they differ from one another. Büsgen's attempt (p. 6)

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to press into his service *Phys.* i, 2, sub init., and i. 5, sub init. is also a mistake; for in the first of these passages Anaximander, if he were named at all, would be ranked among those who assume a *μία ἀρχὴ κινουμένη*; and the second does not aim at a complete enumeration of the different systems: Empedocles, Anaxagoras, and the Pythagoreans, are none of them mentioned, and it is only in a forced manner that Heracleitus can be brought in under the category of those who hold the rarefaction and condensation of primitive matter.

[1] Separation corresponds to mixing (*τῶν γὰρ αὐτῶν μῖξίς ἐστι καὶ χωρισμὸς*, as it said in *Metaph.* i. 8. 989 b, 4; a passage well worth comparing with the one before us); if all things arose by separation from the primitive matter, this matter was previously a mixture of all things. In the same way, therefore, that Aristotle can speak of a *separation* or *division*, when the separated elements were only potentially contained in the primitive matter, he can likewise, in the same case, speak of a mixture. It is not the least necessary that the *μῖγμα* should first have been brought about by a meeting together of the particular substances, as Büsgen (p. 3, 7, 11 sq. of the treatise mentioned in the preceding note) seems to assume in regard to the *ἄπειρον* of Anaximander; this, indeed, is absolutely incompatible with the concept of primitive matter, of the Eternal and the Unbecome. In considering the above-mentioned passage, it must also be observed that here the *μῖγμα* is primarily ascribed to Empedocles, and only in the second place to Anaximander, by the addition *καὶ Ἀναξιμάνδρου*. We might here admit a slight *zeugma*, so that the word, which in its full power could only be used of Empedocles, might be applied in its general conception (Unity including in itself a Multiplicity) to Anaximander, and this is all the more justifiable, since the passage belongs to a section of Aristotle which (perhaps because it was originally a draft intended for his own use) is unequalled among all his writings for scant expression, and in which the proper meaning of the author is often only discoverable by completing thoughts which he has scarcely indicated.

goras can only be held to agree with Anaximander on the subject of primitive matter if we attribute to him as his original principle a matter without definite qualities (*μία φύσις ἀόριστος*), instead of a mixture of determinate and qualitatively distinct substances.[1] That the doctrine of Anaxagoras might ultimately be reduced to this theory, which is certainly divergent from its primary sense, had already been remarked by Aristotle.[2] Theophrastus[3] drew the same inference, and makes his comparison of Anaxagoras with Anaximander contingent on its admission. This shows that he ascribed to Anaximander a primitive matter in which no particular qualities of bodies were as yet present, not a matter that comprehended all particular substances as such within itself. Besides, the text in question does not attribute this latter doctrine to Anaximander; for the words to which this meaning is ascribed[4] refer to Anaxagoras.[5] Moreover these words are not given by

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[1] In the words quoted between inverted commas, p. 233, 1, *καὶ οὕτω μὲν*—Ἀναξιμάνδρῳ, the only passage that Simplicius there cites textually from him.

[2] *Metaph.* i. 8, 989 a, 30; cf. *ibid.* xii. 2, 1069 b, 21.

[3] *Τὸν Ἀναξαγόραν εἰς τὸν Ἀναξίμανδρον συνωθῶν*, as it is said in Simpl. *Phys.* 33 a.

[4] Simp. *loc. cit.* from *ἐκεῖνος γὰρ* to *ὑπαρχόντων*, where Brandis (*Gr. Röm. Phil.* i. 13) sees a statement about Anaximander emanating from Theophrastus.

[5] These words may certainly refer to Anaximander, but they may also refer to Anaxagoras; for though *ἐκεῖνος* usually points to the more remote, it very often applies to the nearer of two previously named subjects, cf. e.g. Plato, *Polit.* 303 B; *Phædr.* 231 C, 233 A, E; Arist. *Metaph.* i. 4, 985 a, 14 sq.; Sext. *Pyrrh.* i. 213. That this is only possible when the idea indicated by *ἐκεῖνος* and nearer in order of words is farther in the thought of the author I cannot admit (Kern, *Beitr. zur Darstellung der Phil. des Xenophanes*, Danzig, 1871, p. 11: Büsgen's observations on the same subject, and on the *ἄπειρον* of Anaximander, I must pass over). When, for example, Aristotle says (*Metaph.* xii. 7, 1072 b, 22): *τὸ γὰρ δεκτικὸν τοῦ νοητοῦ καὶ τῆς οὐσίας νοῦς· ἐνεργεῖ δὲ ἔχων. ὥστ' ἐκεῖνο* (the *ἔχειν* and *ἐνεργεῖν*, ac-

Simplicius as a quotation from Theophrastus, but as an expression of his own opinion. This may be based upon the testimony of Theophrastus, and the conjecture is in itself probable enough. But it can only be main-

tual thought) *μᾶλλον τούτου* (in a higher degree than the mere faculty of thinking) *ὃ δοκεῖ ὁ νοῦς θεῖον ἔχειν*;—*ἐκεῖνο* relates not merely to what is the nearer in order of words, but also to the principal idea; *τούτου* to what is farther, and is only introduced in a comparison with it. When (*Ibid.* x. 2, beginning) it is asked whether the *ἓν* is a self-dependent substance, as the Pythagoreans and Plato think, *ἢ μᾶλλον ὑπόκειταί τις φύσις, καὶ πῶς δεῖ γνωριμωτέρως λεχθῆναι καὶ μᾶλλον ὥσπερ οἱ περὶ φύσεως: ἐκείνων γάρ*, and so forth (vide *supra*, p. 228, 3), it cannot be supposed that the physicists to which the *ἐκείνων* refers, are farther from Aristotle's thought than the Pythagoreans and Plato. Similarly in the *Phædrus*, 233 E, the *προσαιτοῦντες*, to which *ἐκεῖνοι* relates, are not only the nearest mentioned term, but also the leading idea. Still less could we expect to find this rule of Kern's scrupulously carried out by so recent a writer as Simplicius. In this case it is not Anaximander, but Anaxagoras, of whom he primarily speaks. If *ἐκεῖνος* be referred to Anaximander, we make Simplicius say: 1. According to Theophrastus Anaxagoras's doctrine of primitive substances is similar to that of Anaximander. 2. Anaximander admitted that particular substances were contained as such in the *ἄπειρον*, and were moved in regard to one another when the process of separation took place. 3. But motion and separation were derived (not by Anaximander, but) by Anaxagoras from *νοῦς*. 4. Anaxagoras, therefore, seems to assume an infinity of primitive substances, and one moving force, *νοῦς*. 5. If, however, we substitute *for* the mixture consisting of many substances (*i. e.* the theory which, according to this explanation, belonged to Anaximander) a simple homogeneous mass, the theory of Anaxagoras would harmonise with that of Anaximander. Of these five propositions, the second would stand in no sort of connection with the third and fourth, and would be in striking contradiction to the fifth; and in the fourth, the inference that Anaxagoras *therefore* believed in an infinity of matters, has no foundation in the preceding proposition: *ἐκεῖνος*, therefore, can only be Anaxagoras. Even the *ἄπειρον*, of which this *ἐκεῖνος* is said to have spoken, forms no obstacle, for Anaxagoras (vide p. 879, German text) maintained the *ἀπειρία* of primitive substance very decidedly; and Kern is surprised that the expression, *ἄπειρον*, generally used to describe Anaximander's primitive matter, should designate that of Anaxagoras, but this passage shows (cf. also *Metaph.* i. 7, 988 a, 2, where Aristotle applies to his doctrine the expression *ἀπειρία τῶν στοιχείων*, as Kern himself observes) how little we need regard that difficulty. Theophrastus directly reduces the primitive substances of Anaxagoras to the *φύσις τοῦ ἀπείρου*.

tained so long as it opposes nothing that demonstrably comes from Theophrastus. Schleiermacher[1] and Brandis[2] have conclusively shown that Simplicius had no accurate and independent knowledge of Anaximander's doctrine, and that his utterances on the subject are involved in glaring contradictions. His evidence, therefore, should not induce us, any more than that of Augustine and Sidonius or Philoponus, to attribute to Anaximander a doctrine explicitly denied to him by Theophrastus. On the other hand, the testimony of so trustworthy a witness as Theophrastus, together with the further evidence hereafter to be cited, justifies us in maintaining that this philosopher did not regard his primitive matter as a mixture of particular matters, and that consequently it is improper to separate him, as an adherent of a mechanical system of physics, from the dynamists Thales and Anaximenes. And this so much the more, as it is improbable, on general grounds, that the view which Ritter attributes to him should belong to so ancient a period. The theory of unchanging primitive substances presupposes, on the one side, the reflection that the properties of the several kinds of matter could have had no beginning, any more than matter as a whole; but among the Greeks we do not meet with this thought until after the period when the possibility of Becoming was denied by Parmenides, to whose propositions on this subject Empedocles, Anaxagoras, and Democritus expressly go back. On the other side, this theory (of unchanging primitive matter) is united in Anaxagoras with the idea of an intelligence that orders the world; and even the analogous notions of Empedocles and the atomists were conditioned by their conception of efficient causes. None of these philosophers could have conceived a primitive matter as qualitatively unchangeable, if each—Anaxagoras in *νοῦς*, Empedocles in Hate and Love, the Atomists in the Void—had not also admitted a special principle of movement. No one has discovered any such doctrine in Anaximander;[1] nor can we conclude, from the small fragment known to us of his work,[2] that he placed motive force in individual things, and supposed them to come forth by their own impulse from the original mixture; it is the infinite itself[3] that moves all things. All the conditions, therefore, of a mechanical theory of physics[4] are here wanting, and we have no ground for seeking such a theory in Anaximander in opposition to the most trustworthy evidence.

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[1] *Loc. cit.* 180 sq.

[2] *Gr. Röm. Phil.* i. 125.

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[1] Ritter, *Gesch. der Phil.* i. 284.

[2] Ap. Simpl. *Phys.* 6 a: *ἐξ ὧν δὲ ἡ γένεσίς ἐστι τοῖς οὖσι καὶ τὴν φθορὰν εἰς ταῦτα γίνεσθαι κατὰ τὸ χρεών. διδόναι γὰρ αὐτὰ τίσιν καὶ δίκην τῆς ἀδικίας κατὰ τὴν τοῦ χρόνου τάξιν.* Simplicius adds that Anaximander is speaking *ποιητικωτέροις ὀνόμασιν.*

[3] According to the statement in Arist. *Phys.* iii. 4, quoted *infra* p. 248, 1.

[4] That is, of mechanical Physics in the sense which Ritter gives to the expression in his division of the Ionian Philosophers into Dynamists and Mechanists; by Mechanists he understands those who make the determinate matters, as such, preexist in primitive matter; by Dynamists, those who make the distinguishing properties of the determinate matters first develope themselves in their emergence from a qualitatively homogeneous primitive matter. It is not, however, incompatible with the latter theory that natural phenomena should further be mechanically explained, by the movement and mixing of the matters that have issued from the primitive matter. As Anaximander (this is proved by Teichmüller, *loc. cit.*, p. 68 sq., and will hereafter appear in this work) adopted this latter procedure, it must not surprise us, though the inevitable result is that neither a purely mechanical nor a purely dynamical explanation of nature was proposed and completed by him. Still less ought it to astonish anyone (as it does Teichmüller, p. 24) that I should refuse to Anaximander a specific moving principle, while I afterwards (vide *infra*) make the movement of the heavens proceed from the *ἄπειρον*. I deny that Anaximander had a moving principle *distinct from*

If Anaximander did not conceive his primitive matter as a mixture of particular substances, but as a homogeneous mass, we must next enquire what was the nature of this mass. The ancients, beginning with Aristotle, unanimously assert that it consisted of none of the four elements. Aristotle several times mentions the view that the primitive matter in regard to its density is intermediate between water and air,[1] or between air and fire,[2] and not a few ancient writers[3] have referred these assertions to Anaximander; for example, Alexander,[4] Themistius,[5] Simplicius,[6] Philoponus,[7] and Asclepius.[8] But although this theory has been recently defended[9] against Schleiermacher's objections,[10] I cannot convince myself that it is well

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the primitive matter, the ἄπειρον; and I maintain, precisely for that reason, that he placed the motive power in this primitive matter itself, and derived the motion of the heavens from that of the ἄπειρον. Where is the contradiction?

[1] *De Cœlo*, iii. 5, 303 b, 10; *Phys.* iii. 4, 203 a, 16; c. 5, 205 a, 25; *Gen. et Corr.* ii. 5, 332 a, 20.

[2] *Phys.* i. 4, 187 a, 12, vide *inf.* p. 248, 1; *Gen. et Corr. loc. cit.* and ii. 1. 328 b, 35; *Metaph.* i. 7, 988 a, 30; i. 8, 989 a, 14.

[3] Cf. Schleiermacher, *loc. cit.* 175; Brandis, *Gr. Röm. Phil.* i. 132.

[4] In *Metaph.* i. 5, 7, pp. 34, 2; 36. 1; 45, 20; 46, 28; and ap. Simpl. 32 a.

[5] *Phys.* 18 a, 33 a; 33 b (pp. 124, 230, 232 sp.). The ground of this definition is here, p. 33 a, thus stated: As the elements are opposed to one another, one element conceived as infinite would annihilate all the rest. The Infinite must, therefore, be intermediate among the various elements. This thought can hardly belong to Anaximander, as it presupposes the later doctrine of the elements; it is no doubt taken from Arist. *Phys.* iii. 5, 204 b, 24.

[6] *Phys.* 104; 105 b; 107 a; 112 b; *De Cœlo*, 273 b, 38; 251 a, 29; 268 a, 45 (*Schol. in Ar.* 514 a, 28; 510 a, 24. 513 a, 35).

[7] *De Gen. et Corr.* 3; *Phys.* A 10; C 2, 3.

[8] *Schol. in Arist.* 553 b, 33.

[9] Haym, *in der Allg. Encykl.* iii. Sect. B, xxiv. 26 sq.; F. Kern, in the *Philologus*, xxvi. 281, and p. 8 sqq. of the treatise mentioned *supra*, p. 237, 5.

[10] *Loc. cit.* 174 sqq.

founded. One of the Aristotelian passages quoted certainly seems to contain a reference to expressions which Anaximander employed;[1] but the reference is itself questionable, and even if it be admitted, it does not follow that the whole passage relates to him;[2] while, on the other hand, the very next words clearly imply the contrary. For Aristotle here ascribes to the philosophers, who believed the primitive matter to be something intermediate between air and water, the theory that things originated from primitive matter by means of rarefaction and condensation; and this he distinctly denies of Anaximander.[1] No other passage can be quoted from Aristotle to show that he found this definition of primitive matter in Anaximander's writings.[2] As to the statements of later writers, they

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[1] *De Cælo*, iii. 5, at the beginning: *ἔνιοι γὰρ ἓν μόνον ὑποτίθενται καὶ τούτων οἱ μὲν ὕδωρ, οἱ δ' ἀέρα, οἱ δ' ὕδατος μὲν λεπτότερον, ἀέρος δὲ πυκνότερον, ὃ περιέχειν φασὶ πάντας τοὺς οὐρανοὺς ἄπειρον ὄν* cf. *Phys.* iii. 4, 203 b, 10 (*supra*, p. 248, 1), where the words *περιέχειν ἅπαντα καὶ πάντα κυβερνᾷν* are, with some probability, ascribed to Anaximander; and Hippolytus, *Refut. Hær.* i. 6.

[2] The words, *ὃ περιέχειν—ἄπειρον ὄν* admit of two interpretations. They may either be referred solely to the subject immediately preceding the *ὕδατος λεπτότερον*, &c., or to the main subject of the whole proposition, the *ἕν*. In the former case, those who make primitive matter a something intermediate between air and water, would be credited with the assertion that this intermediate something embraces all things. In the latter case, the sense of the passage would be as follows: some assume only one primitive matter—either water, or air, or fire, or a body that is more subtle than water, and more dense than air; and this primitive matter, they say, embraces all worlds by virtue of its unlimitedness. In point of grammar the second interpretation seems to me undoubtedly the best; but one thing may certainly be urged against it (Kern, *Beitrag.* &c., p. 10), that, according to *Phys.* iii. 5, 205 a, 26, *οὐθεὶς τὸ ἓν καὶ ἄπειρον πῦρ ἐποίησεν οὐδὲ γῆν τῶν φυσιολόγων* (Heracleitus, *ibid.* 205 a, 1 sq., is particularly classed among those who regard the All as limited), and that consequently the relative clause, *ὃ περιέχειν*, &c., cannot contain any reference to those who made fire their primitive matter. But such inaccuracies are not so very uncommon with Aristotle, and in the present instance I do not think it impossible that in a comprehensive statement, such as we have here, he should have ascribed the infinity of matter, either explicitly or implicitly admitted by the great majority of philosophers, to all without exception. and should have expressed this doctrine in the words of the man who first introduced it. On the other hand, it is quite conceivable that one of the philosophers (or if only one held it, the one philosopher) who made the primitive matter intermediate between water and air, may have adopted Anaximander's expression, *περιέχειν πάντας τοὺς οὐρανοὺς*, to characterise its infinity (Anaximander himself, *Phys.* iii. 4, only says, *περιέχειν ἅπαντα*); in the same way that Anaximenes (vide *infra*) says of the air that it *ὅλον τὸν κόσμον περιέχει*, and Diogenes (*Fr.* 6, *infra*) also applies to the air another expression of the Anaximandrian fragment: *πάντα κυβερνᾷν*. The passage we have been considering, therefore, does not warrant us in ascribing to Anaximander a doctrine which, as will

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immediately be shown, is not ascribed to him by Aristotle.

[1] Aristotle thus continues (*De Cælo*, iii. 5) immediately after the words quoted above: *ὅσοι μὲν οὖν τὸ ἓν τοῦτο ποιοῦσιν ὕδωρ ἢ ἀέρα ἢ ὕδατος μὲν λεπτότερον ἀέρος δὲ πυκνότερον, εἶτ' ἐκ τούτου πυκνότητι καὶ μανότητι τἆλλα γεννῶσιν*, &c.

[2] Kern, *Philolog.* xxvi. 281, thought that the passage (quoted *sup.* 228, 3), *Phys.* iii. 4, might be so taken; since, according to this, Anaximander must be reckoned among the philosophers who conceive of the Infinite as a body intermediate between two elements. In the *Beitrag zur Phil. der Xen.*, p. 8, he prefers to interpret the words thus: the physicists all assign as substratum to the Infinite one of the elements, or that which is intermediate between them. I cannot adopt this explanation. I think that Aristotle would have expressed this thought otherwise. He would have said perhaps: *ὑποτιθέασιν ἑτέραν τινὰ φύσιν τῷ ἀπείρῳ, ἤ τι τῶν λεγομένων στοιχείων, ἢ τὸ μεταξὺ τούτων.* On the other hand, I still consider that the words, *ἑτέραν τινὰ φύσιν τῶν λεγομένων στοιχείων*, may have a more general signification, an elemental body, different from itself, so that the matter underlying all particular substances would be included under the expression. The possibility of this view appears, not only from Aristotle's comprehensive use of *στοιχεῖον* (e.g. *Metaph.* i. 8, 989 a, 30, cf. b, 16, xii. 4; *De An.* i. 2, 404 b, 11), but also from the definition of the word (*Metaph.* v. 3); nor does the word *λεγομένων* present any difficulty, for we have no right to find an allusion here to 'the four elements.' Aristotle, on the contrary, expressly says, *loc. cit.*, 1014 a, 32; *τὰ τῶν σωμάτων στοιχεῖα λέγουσιν οἱ λέγοντες εἰς ἃ διαιρεῖται τὰ σώματα ἔσχατα, ἐκεῖνα δὲ μηκέτ' εἰς ἄλλα εἴδει διαφέροντα, καὶ εἴτε ἓν εἴτε πλείω τὰ τοιαῦτα, ταῦτα στοιχεῖα λέγουσιν.* Similarly, *De Cælo*, iii. 3, 302 a, 15 sqq. The *λεγόμενα στοιχεῖα* are, according to this, those equally divided bodies, which form the ultimate constituent or constituents of compound bodies. Such undoubtedly is Anaximander's *ἄπειρον*, if we understand by it a matter to which the properties of determinate sub-

appear to be entirely based on the passages in Aristotle. Simplicius, at any rate, cannot be quoting directly from Anaximander, otherwise he could not speak so undecidedly as he does,[1] and he could not ascribe to this philosopher, as if it were a subject of indifference, the double theory of matter as intermediate between air and fire, and again as intermediate between air and water;[2] for these two theories obviously exclude one another, and cannot both have been found in Anaximander's work. Nor can Simplicius have found among his predecessors allusions to that work, otherwise a different turn would at once have been given to the discussion. The same may be said of Porphyry,[3] who in that case would not have grounded his opinion (which differs from the opinion of Alexander) solely upon the Aristotelian passage. This also holds good of Alexander[4] and Philoponus.[5] These later statements, therefore, one and all, depend entirely upon conjecture, and the words of Aristotle were only referred to Anaximander because they seemed to apply to no other philosopher. Now it is clear from the undoubted testimony of the most trustworthy authorities, that Anaximander did not consider his primitive matter

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stances do not yet belong. We are almost forced to take this view of Aristotle's words, because the passage would otherwise apply neither to Anaxagoras, nor to the Atomists. For neither the *ὁμοιομερῆ*, nor the atoms, belong to the four elements, or to that which is *μεταξὺ τούτων*; but Aristotle himself maintains the *ἀπειρία* of the *ὁμοιομερῆ*, and of the atoms; these must also, therefore, be a *ἑτέρα φύσις*, which serves as substratum to the *ἄπειρον*.

[1] *Phys.* 32 a.

[2] The former, *Phys.* 107 a. The latter, *Phys.* 105, b. *De Cœlo*, 273 b, 38; 251 a, 29.

[3] Simplicius, *Phys.* 32 a.

[4] In *Metaph.* 983, a, 11; *Schol.* 553 b, 22: *τὴν Ἀναξιμάνδρου δόξαν, ὃς ἀρχὴν ἔθετο τὴν μεταξὺ φύσιν ἀέρος τε καὶ πυρὸς, ἢ ἀέρος τε καὶ ὕδατος· λέγεται γὰρ ἀμφοτέρως.*

[5] Even he is uncertain, in the passages quoted, whether Anaximander's Infinite is intermediate between air and fire, or air and water.

as intermediate between two definite kinds of matter; but that he either was silent as to its nature, or expressly described it as that to which none of the properties of particular substances belongs. For when Aristotle, in the above-mentioned passage, speaks generally of those who posited as primitive matter a definite element, or something intermediate between two elements, and derived all other things from it by the processes of rarefaction and condensation, it is obvious that his design is not to draw a distinction between these philosophers and others who equally assumed a primitive matter of the same kind, but made things to arise out of it in a different manner. On the contrary, in refuting the theory of a derivation of things by means of rarefaction and condensation, he believes that he has refuted the general theory of a primitive matter of definite quality. This is still clearer from the passage in the *Physics*, i. 4.[1] 'Some of them,' he here says, 'starting from the pre-supposition of a determinate primitive matter, make things to originate from it by means of rarefaction and condensation; others, like Anaximander, Anaxagoras, and Empedocles, maintain that opposites are already contained in the One primitive matter, and are produced from it by means of separation.' Here it is perfectly evident that he conceives rarefaction and condensation to be as essentially connected with the theory of a qualitatively determined matter, as separation with that of an original mixture of all things, or of a matter without qualitative determinateness. Nor can it be otherwise; for in order to arise by separation out of the primitive matter, particular matters must either potentially or actually have been contained in it; but this would only be possible if the primitive matter were itself not a particular matter, not merely intermediate between two other particular matters: but including them all equally in itself. If we further consider that this chapter of the *Physics* is occupied, not with the manner in which things originate from elements, but with the number and nature of primitive substances themselves,[1] it seems beyond question that Anaximander was opposed to the rest of the Ionians, not only from the first point of view, but from the second, and that consequently his infinite can have been neither one of the four elements, which were afterwards admitted, nor an intermediary between two of these elements. This probably explains why Anaximander is passed over in *Metaph.* i. 3, and also a remark,[2] which otherwise would have no historical point, and which the Greek commentators[3] themselves apply to him. 'Some,' says Aristotle, 'seek the Infinite, not in any particular element, but in that out of which all particular elements arose; because each particular substance, conceived as infinite, must exclude those substances that are opposed to it.' This reason, indeed, which points to the later theory of the elements, can hardly have been so stated by Anaximander. But whether Aristotle inferred it, after his manner, from some ambiguous utterance, or arrived at it by his own conjecture, or whether later authors may, perhaps, have interpolated it, the doctrine in support of which it is adduced no doubt belongs originally to Anaximander. Theophrastus expressly says so[1] in describing Anaximander's Infinite as One matter without qualitative determinateness; and with this Diogenes[2] and the Pseudo-Plutarch,[3] and among the commentators of Aristotle, Porphyry, and probably also Nicolaus of Damascus,[4] agree; of these the two first, at any rate, appeared to have used a special source. Simplicius himself says elsewhere the same thing.[5] That Anaximander's primitive matter was not a qualitatively determined matter is, therefore, certain; the only doubt that remains is whether he expressly denied to it all determination, or merely abstained from qualifying it at all. The latter hypothesis is the more probable of the two; it is actually maintained by some of our authorities, and appears simpler and, therefore, more in accordance with so ancient a system, than the other theory, which constantly presupposes considerations like those above cited from Aristotle; it also furnishes the most reasonable explanation of the fact that Aristotle only mentions Anaximander when he is discussing the question of the finiteness or infinity of matter, and of the production of things from it, and not when he is dealing with its elementary composition; for in the case we are assuming, no distinct utterance of Anaximander would have been known to him on this point, as on the two former (not even the negative statement that the Infinite is not a particular substance), and so he prefers to be wholly silent on the subject. I therefore believe that Anaximander held simply to this proposition: that the Infinite or infinite matter existed before particular things. As to the material constitution of this primitive substance, he has given us no precise information.

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[1] Vide *supra*, p. 234, 3.

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[1] This Haym, *loc. cit.*, denies; but it unquestionably results from C 2. *sub init.*

[2] *Phys.* iii. 5, 204 b, 22: ἀλλὰ μὴν οὐδὲ ἓν καὶ ἁπλοῦν ἐνδέχεται εἶναι τὸ ἄπειρον σῶμα, οὔτε ὡς λέγουσί τινες τὸ παρὰ τὰ στοιχεῖα, ἐξ οὗ ταῦτα γεννῶσιν, οὔθ' ἁπλῶς. εἰσὶ γάρ τινες, οἳ τοῦτο ποιοῦσι τὸ ἄπειρον, ἀλλ' οὐκ ἀέρα ἢ ὕδωρ, ὡς μὴ τἆλλα φθείρηται ὑπὸ τοῦ ἀπείρου αὐτῶν· ἔχουσι γὰρ πρὸς ἄλληλα ἐναντίωσιν, οἷον ὁ μὲν ἀὴρ ψυχρὸς, τὸ δ' ὕδωρ ὑγρὸν, τὸ δὲ πῦρ θερμόν. ὧν εἰ ἦν ἓν ἄπειρον ἔφθαρτο ἂν ἤδη τἆλλα· νῦν δ' ἕτερον εἶναί φασιν ἐξ οὗ ταῦτα.

[3] Simp. 11 a; Themist. 33 a, (230 sq.).

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[1] Ap. Simpl. vide *supra*, p. 223, 1.

[2] ii. 1: ἔφασκεν ἀρχὴν καὶ στοιχεῖον τὸ ἄπειρον, οὐ διορίζων ἀέρα ἢ ὕδωρ ἢ ἄλλο τι.

[3] *Plac.* i. 3, 5: ἁμαρτάνει δὲ οὗτος μὴ λέγων τί ἐστι τὸ ἄπειρον, πότερον ἀήρ ἐστιν ἢ ὕδωρ ἢ γῆ ἢ ἄλλα τινὰ σώματα.

[4] Simpl. *Phys.* 32 a.

[5] *Phys.* 111 a: λέγουσιν οἱ περὶ Ἀναξίμανδρον [τὸ ἄπειρον εἶναι] τὸ παρὰ τὰ στοιχεῖα ἐξ οὗ τὰ στοιχεῖα γεννῶσιν. 6 a: λέγει δ' αὐτὴν [τὴν ἀρχὴν] μήτε ὕδωρ ἄλλο τῶν καλουμένων στοιχείων, ἀλλ' ἑτέραν τινὰ φύσιν ἄπειρον. Also 9 b.

Anaximander further taught that the Infinite is eternal and imperishable.[1] In this sense he is said to have designated the first principle of all things by the expression *ἀρχή*.[2] He conceived motive power to be combined from the beginning with matter;[1] or, as Aristotle says (*loc. cit.*), he taught that the Infinite not merely contained, but directed all things.[2] He thus regarded matter, after the manner of the early Hylozoism, as self-moved and living; and in consequence of this motion he supposed it to produce all things from itself. When Aristotle (*loc. cit.*), therefore, designates Anaximander's Infinite as the Divine essence, he describes it correctly,[3] though we do not know whether Anaximander himself used that expression.[4]

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[1] Arist. *Phys.* iii. 4, 203 b, 10 (cf. *De Cœlo*, iii. 5; *supra*, p. 242, 2). The Infinite is without beginning or end, etc.: *διὸ, καθάπερ λέγομεν, οὐ ταύτης ἀρχὴ, ἀλλ' αὕτη τῶν ἄλλων εἶναι δοκεῖ καὶ περιέχειν ἅπαντα καὶ πάντα κυβερνᾷν, ὥς φασιν ὅσοι μὴ ποιοῦσι παρὰ τὸ ἄπειρον ἄλλας αἰτίας, οἷον νοῦν ἢ φιλίαν· καὶ τοῦτ' εἶναι τὸ θεῖον· ἀθάνατον γὰρ καὶ ἀνώλεθρον, ὥς φησιν ὁ Ἀναξίμανδρος καὶ οἱ πλεῖστοι τῶν φυσιολόγων.* The words in spaced type are probably taken from Anaximander's work; only for *ἀνώλεθρον*, *ἀγήρω* may have been substituted as Hippolytus, *Refut. Hær.* i. 6 [*ταύτην* (*τὴν αρχὴν*) *δ' ἀΐδιον εἶναι καὶ ἀγήρω καὶ πάντας περιέχειν τοὺς κόσμους*] thinks likely. More recently Diog. ii. 1: *τὰ μὲν μέρη μεταβάλλειν, τὸ δὲ πᾶν ἀμετάβλητον εἶναι.*

[2] Hippolyt. *loc. cit.*, and Simpl. *Phys.* 32 b, certainly assert this; and Teichmüller (*Stud. zur Gesch. der Begr.* 49 sqq.), who disputes it, does violence, as it seems to me, to the wording of these passages. It is another question whether the statement is true, and this we can scarcely ascertain. Like Teichmüller, I cannot regard it as self-evident, that he employed the expression *ἀρχή*; and my doubt is strengthened by the circumstance that a similar remark about Thales

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(that he called water ἀρχὴ) I can discover neither in Diog. i. 27, nor elsewhere; and consequently I cannot credit it. But if Anaximander did call his Infinite the ἀρχὴ or the ἀρχὴ πάντων, or designate it in any other similar manner, this would only be saying that the Infinite was the *beginning* of all things, which is far enough from the Platonic and Aristotelian concept of the ἀρχὴ, the ultimate cause.

[1] Plut. ap. Eus. *Pr. Ev.* i. 8, 1: Ἀναξίμανδρον . . . τὸ ἄπειρον φάναι τὴν πᾶσαν αἰτίαν ἔχειν τῆς τοῦ παντὸς γενέσεώς τε καὶ φθορᾶς. Herm. *Irris.* c. 4: Ἀναξ. τοῦ ὑγροῦ πρεσβυτέραν ἀρχὴν εἶναι λέγει τὴν ἀΐδιον κίνησιν, καὶ ταύτῃ τὰ μὲν γεννᾶσθαι τὰ δὲ φθείρεσθαι. Hippolyt. l.c.: πρὸς δὲ τούτῳ κίνησιν ἀΐδιον εἶναι, ἐν ᾗ συμβαίνει γίνεσθαι τοὺς οὐρανούς. Simpl. *Phys.* 9, p.: ἄπειρόν τινα φύσιν . . . . ἀρχὴν ἔθετο, ἧς τὴν ἀΐδιον κίνησιν αἰτίαν εἶναι τῆς τῶν ὄντων γενέσεως ἔλεγε. Similarly 107 a; 257 b.

[2] The expression κυβερνᾷν, which, in its simplest meaning, signifies the guidance of the ship's movements by the rudder, here relates primarily to the movement of the celestial system.

[3] Röth (*Gesch. der Abendl. Phil.* ii. a, 142) believes that the self-dependent moving force attributed to the Infinite presupposes an intelligence, a conscious spiritual nature, and that the Infinite of Anaximander must thus be conceived as infinite spirit; but this is an entire misapprehension of the contemporary modes of thought, and is contradicted by Aristotle's well-known assertion (*Metaph.* i. 3, 984 b, 15 sq.) that Anaxagoras was the first who declared νοῦς to be the principle of the world. In appealing for want of any other evidence to the words of Theophrastus quoted above (p. 233, 1), he has overlooked the fact that Anaximander is here compared with Anaxagoras only in respect of his definition of the σωματικὰ στοιχεῖα. Not to mention other inaccuracies, this does away with the discovery, of which Röth (*loc. cit.*) is so proud, that Anaximander's doctrine of the ἄπειρον has more theological than physical importance, and that it is in complete harmony with the Egyptian theology, as he endeavours to prove.

[4] The text of Simpl. *Phys.* 107 a, which is only a paraphrase of

We are farther told that he represented particular substances as developing themselves from the primitive matter by means of separation (*ἐκκρίνεσθαι, ἀποκρίνεσθαι*),[1] and Anaximander himself seems to have used this word;[2] but what he precisely understood by separation does not appear. He apparently left this conception in the same uncertainty as that of the primitive matter, and that which floated before his mind was merely the general notion of an emergence of the several matters distinct from one another, out of the original homogeneous mass. We hear, on the other hand, that he made the division of heat and cold the first result of this separation.[3] From the mixture of

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the passage we have quoted from Aristotle, cannot of course be adduced in support of it. I am unable to give such a decided negative to this question as Büsgen does, *loc. cit.*, p. 16 sq.; but Anaximander certainly could not have named his Infinite *τὸ θεῖον* in the monotheistic sense; he only called it *θεῖον*, divine.

[1] Arist. *Phys.* i. 4, vide *supra*, p. 234, 3; Plutarch in Eus. *loc. cit.*; Simpl. *Phys.* 6 a: *οὐκ ἀλλοιουμένου τοῦ στοιχείου τὴν γένεσιν ποιεῖ, ἀλλ' ἀποκρινομένων τῶν ἐναντίων διὰ τῆς ἀϊδίου κινήσεως.* And similarly *ibid.* 32 b; 51 b (vide *supra*, pp. 228, 3; 233, 1), where, however, Anaximander's doctrine is too much confused with that of Anaxagoras, Themist. *Phys.* 18 a; 19 a (124, 21; 131, 22 sq.); Philoponus, *Phys.* C 2. The incorrect statement of Simplicius that Anaximander believed in rarefaction and condensation, was no doubt based upon the false supposition that his primitive matter was intermediate between two elements, and that he was consequently alluded to by Aristotle, *De Cælo*, iii. 5 (vide *supra*, p. 242, 1); *Phys.* i. 4, at the beginning (vide *supra*, p. 234, 3); cf. Philoponus, *Phys.* c. 3.

[2] We gather this partly from the use of the word *φησὶ* in Arist. *loc. cit.*, and also from considering the manner in which he reduces both the cosmogony of Empedocles and that of Anaxagoras to the concept, *ἐκκρίνεσθαι*. Moreover, it is impossible to see how Aristotle and his successor could have been led to attribute the *ἔκκρισις* to Anaximander, unless they had found it in his writings.

[3] Simpl. *Phys.* 32 b: *τὰς ἐναντιότητας . . . ἐκκρίνεσθαί φησιν Ἀναξίμανδρος . . . ἐναντιότητες δέ εἰσι θερμὸν, ψυχρὸν, ξηρὸν, ὑγρὸν καὶ αἱ ἄλλαι.* More precisely Plut. (ap. Eus. *loc. cit.*): *φησὶ δὲ τὸ ἐκ τοῦ ἀϊδίου γόνιμον θερμοῦ τε καὶ ψυχροῦ κατὰ τὴν γένεσιν τοῦδε τοῦ κόσμου ἀποκριθῆναι.* Stob. *Ecl.* i. 500:

these two he appears to have derived the fluid element,[1] which, like Thales, he regarded as the immediate (though not, like him, as the ultimate) substance of the world. On this account, probably, and perhaps also in imitation of his predecessor, he calls water the seed of the world.[2] From the fluid universal matter, by successive separations, three kinds of matter were parted off: the earth, the air, and an orb of fire, which surrounds the whole like a spherical crust;[3] this at least seems to be the meaning of the scattered indications

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'Α. ἐκ θερμοῦ καὶ ψυχροῦ μίγματος [εἶναι τὸν οὐρανόν]. That Aristotle, as is usually believed, reckoned dryness and moisture among the primordial oppositions, as well as cold and heat, Simplicius does not say: he himself gives, according to the doctrine of Aristotle, this explanation of the 'ἐναντιότητες.'

[1] Arist. *Meteor.* ii. 1, 353 b, 6, mentions the opinion that the πρῶτον ὑγρὸν at first filled the whole space around the world, when it was dried up by the sun: τὸ μὲν διατμίσαν πνεύματα καὶ τροπὰς ἡλίου καὶ σελήνης φασὶ ποιεῖν, τὸ δὲ λειφθὲν θάλατταν εἶναι, and this is why the sea also dries up little by little, Alex. *in h. l.*, p. 91 a (Arist. *Meteor. ed. Idel.* i. 268; Theophrasti *Op. ed. Wimmer*, iii. fragm. 39) remarks: ταύτης τῆς δόξης ἐγένοντο, ὡς ἱστορεῖ ὁ Θεόφραστος, 'Αναξίμανδρός τε καὶ Διογένης. Similarly *Plac.* iii. 16, 1: 'Α. τὴν θάλασσάν φησιν εἶναι τῆς πρώτης ὑγρασίας λείψανον, ἧς τὸ μὲν πλεῖον μέρος ἀνεξήρανε τὸ πῦρ, τὸ δὲ ὑπολειφθὲν διὰ τὴν ἔκκαυσιν μετέβαλεν. This is the ὑγρὸν of which Hermias (vide *supra*, p. 249, 1) speaks. That in respect to this theory Aristotle or Theophrastus could have said of Anaximander what the work about Melissus (vide *supra*, 232, 2) says of him; ὕδωρ φάμενος εἶναι τὸ πᾶν, I cannot admit with Kern (Θεοφράστου περὶ Μελίσσου, *Philologus*, xxvi. 281, cf. *Beitr. zur Phil. d. Xenoph.* 11 sq.); for these words describe water, not only as that out of which the world has arisen, but as that of which it eternally consists, as its στοιχεῖον (in the sense discussed in p. 243, 2), and this contradicts the most distinct declaration of both these philosophers. Still less can I allow, with Rose (*Arist. libr. ord.* 75), that Anaxagoras regarded moisture or water only as the matter of all things, and that the ἄπειρον, which all our authorities with one accord attributed to him, was foisted upon him by the nomenclature of a later period.

[2] Vide Plutarch, preceding note.

[3] Plut. ap. Eus. according to the quotation, p. 250, 3: καί τινα ἐκ τούτου φλογὸς σφαῖραν περιφῦναι τῷ περὶ τὴν γῆν ἀέρι, ὡς τῷ δένδρῳ φλοιόν, ἧστινος ἀποῤῥαγείσης καὶ εἴς τινας ἀποκλεισθείσης κύκλους ὑποστῆναι τὸν ἥλιον καὶ τὴν σελήνην καὶ τοὺς ἀστέρας.

that we find upon the subject.[1] The heavenly bodies were formed of fire and air; when the fiery circle of the universe burst asunder, and the fire was pent up in wheel-shaped husks of compressed air, from the apertures of which it streams forth; the stoppage of these apertures occasions eclipses of the sun and moon, and the waxing and waning of the moon are produced *in the* same way.[2] This fire is kept up by the exhalations of the earth; and, again, the heat of the sun assists the drying up of the globe and the formation of the sky.[1] That the moon and planets shine by their own light[2] follows necessarily from Anaximander's theories respecting them. The movement of the heavenly bodies he derived from the currents of air caused

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[1] On the other hand, I cannot agree with Teichmüller (*loc. cit.* pp. 7, 26, 58) that he conceived his ἄπειρον as originally a great sphere, and the eternal motion of it (*supra*, p. 248 *sq.*) as a rotation whereby a spherical envelope of fire was parted off and spread over the surface of the mass. No such notion is ascribed to Anaximander by any of our authorities; for the σφαῖρα πυρός lay, not round the ἄπειρον, but around the atmosphere of the earth. Indeed, if we say that the Infinite comprehends all things, or all worlds (pp. 242, 1; 248, 1), we exclude the presupposition that it is itself comprehended by the limits of our world. But a spherical Infinite is in itself so great and so direct a contradiction, that only the most unquestionable evidence could justify our ascribing it to the Milesian philosopher; and, in point of fact, there exists no evidence for it at all.

[2] Hippolyt. *Refut.* i. 6; Plut. in Eus. *loc. cit.*; *Plac.* ii. 20, 1; 21, 1; 25, 1 (Galen. *Hist. Phil.* 15); Stob. *Ecl.* i. 510, 524, 548; Theodoret, *Gr. aff. Cur.* iv. 17, p. 58; Achilles Tatius, *Isag.* c. 19, p. 138 sq. All these writers agree in what is stated in our text. If, however, we attempt any closer definition of this conception, we find considerable divergencies and lacunæ in the accounts. Plutarch, ap. Euseb. only says that the sun and moon were formed when the fiery globe burst asunder, and became enclosed within certain circles. Hippolytus adds that these circles have openings in the places when we see the stars; the stopping up of these occasions eclipses and the phases of the moon. According to the *Placita*, Stobæus, Pseudo-Galen, and Theodoret, Anaximander conceived these circles as analogous to the wheels of a cart; there were openings in the hollow circle of the wheel filled with fire, and through these openings the fire streamed out. Finally, Achilles Tatius says that Anaximander thought the sun had the form of a wheel, from the nave of which the light poured in rays (like the spokes) spreading out as far as the circumference of the sun. The last theory formerly seemed to me to deserve the preference. I must, however, concede to Teichmüller (*Studien*, p. 10 sq.), who has carefully examined all the texts on this subject, that that of Achilles Tatius does not look very authentic; and as we are further informed (*Plac.* ii. 16, 3; Stob. 516) that Anaximander made the stars ὑπὸ τῶν κύκλων καὶ τῶν σφαιρῶν, ἐφ' ὧν ἕκαστος βέβηκε

φέρεσθαι, which is confirmed by the *τροπαὶ τοῦ οὐρανοῦ*, attributed to him by Aristotle (*Meteor.* ii. 2, 355, a, 21), it now appears to me probable that Röth (*Gesch. der Abendl. Phil.* ii. a, 155) has taken the right view in interpreting the wheel-shaped circles filled with fire (Röth wrongly says encompassed with fire on the outside) as the starry spheres; these spheres, in their rotation, pour forth fire through an aperture, and produce the phenomenon of a fiery body circling round the earth. As, however, these rings only consist of air, Teichmüller is not wrong (p. 32 sq.) in disputing the theory of solid spheres and a solid firmament (Röth, *loc. cit.*; Gruppe, *Cosm. Syst. d. Gr.* p. 37 sqq.) as held by Anaximander. In agreement with this view, there is the statement (Stob. 548; *Plac.* ii. 25, 1; Galen, c. 15) that, according to Anaximander, the moon is a circle nineteen times as large as the earth; since it is quite possible that this philosopher, for reasons unknown to us, may have considered the circumference of the moon's orbit (which in that case would coincide with the moon's sphere) to be nineteen times the size of the earth's circumference. When, however, we learn from the same source (Stob. i. 524; *Plac.* 20, 1; 21, 1; Galen, *Hist. Phil.* c. 14, p. 274, 276, 279, K.) that he made the sun's circle twenty-eight times as large as the earth, and the sun itself (the opening of this circle which we behold as the sun's disc) the same size as the earth—this is incompatible with the theory that the sun's circle is the sun's sphere, and its size, consequently, that of the sun's orbit; for that the sun's orbit should be only twenty-eight times as large as the sun's disc, is a glaring contradiction of ocular evidence, which we cannot ascribe to Anaximander. Hippolytus, however, says (as Teichmüller, p. 17, rightly observes) *εἶναι δὲ τὸν κύκλον τοῦ ἡλίου ἑπτακαιεικοσιπλασίονα τῆς σελήνης*, and if we connect with this the statement that the moon is nineteen times as large as the earth, we shall have the sun's orbit 513 times the size of the earth's circumference, and consequently 513 times that of the sun's circumference, which would of course seem sufficient to Anaximander. But from the nature of our evidence we cannot pass certain judgment in the matter.

[1] Arist. *Meteor.* ii. 1 (cf. p. 251, 1); *ibid.* c. 2, 355 a, 21, where Anaximander is not indeed mentioned, but according to Alexander's trustworthy statement (*loc. cit.* and p. 93 b) he is included.

[2] What is asserted in the *Placita*, ii. 28, and Stob. i. 556, of the moon, is denied by Diog. (ii. 1), but (as appears from the passages we have quoted) without foundation.

by the revolution of the spheres;[1] his theories on their position and magnitudes[2] are as arbitrary as we might expect in the childhood of astronomy; if, however, he really taught that the stars were carried round by the movement of circles out of which they received the fires by which they shine, he claims an important place in the history of astronomy as the author of the theory of the spheres. The same would apply to his discovery of the obliquity of the ecliptic,[3] if this has been rightly ascribed to him. In accordance with the notions of antiquity, Anaximander, we are told, regarded the stars as gods, and spoke of an innumerable or infinite multitude of heavenly gods.[1]

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[1] Arist. and Alex., cf. previous note and *supra*, p. 251, 1. In what way the rotation of the heavens is effected, Aristotle does not say, but his words in c. 2, as also in the passage cited p. 251, 1, from c. 1, can scarcely bear any other construction this: than that the heavens are moved by the *πνεύματα*, an idea which is also found in Anaxagoras and elsewhere (Ideler, *Arist. Meteor.* i. 497). Alexander thus (*loc. cit.*) explains the words of Aristotle, quoted p. 251, 1: *ὑγροῦ γὰρ ὄντος τοῦ περὶ τὴν γῆν τόπου, τὰ πρῶτα τῆς ὑγρότητος ὑπὸ τοῦ ἡλίου ἐξατμίζεσθαι καὶ γίνεσθαι τὰ πνεύματά τε ἐξ αὐτοῦ καὶ τροπὰς ἡλίου τε καὶ σελήνης, ὡς διὰ τὰς ἀτμίδας ταύτας καὶ τὰς ἀναθυμιάσεις κἀκείνων τὰς τροπὰς ποιουμένων, ἔνθα ἡ ταύτης αὐτοῖς χορηγία γίνεται περὶ ταῦτα τρεπομένων.* Whether the remark that Theophrastus ascribes this view to Anaximander and Diogenes, refers to this portion of Anaximander's exposition is not quite certain. Teichmüller's theory, *loc. cit.* 22 sqq., that Anaximander derived the movement of the firmament from the turning of the *ἄπειρον*, conceived as spherical, on its axis, I cannot admit, for the reasons given, p. 252, 1, irrespectively of the testimonies just quoted. Nor can I admit, as Teichmüller alleges, that there is any contradiction in my connecting (p. 249, 2) the *πάντα κυβερνᾷν*, ascribed to the Infinite, with the movement of the heavens, while I here derive this movement from the *πνεύματα*. When Anaximander says that the Infinite by its own movement produces that of the universe, this does not prevent his describing (cf. 250 sq.) more particularly the manner in which that movement is brought about, and seeking accordingly the approximate cause for the revolution of the starry spheres in the currents of the air.

[2] According to Stob. 510, and the *Plac.* ii. 15, 6, he placed the sun highest, then the moon, and the fixed stars and planets lowest (Röper in *Philologus*, vii. 609, wrongly gives an opposite interpretation). Hippolytus says the same, only without mentioning the planets. On the size of the sun and moon cf. p. 253. The statements of Eudemus, quoted p. 234, 2, refer to these theories.

[3] Pliny, *Hist. Nat.* ii. 8, 31. Others, however, ascribe this discovery to Pythagoras; vide *infra*, *Pyth.*

The Earth he supposes to have existed at first in a liquid state, and to have been gradually formed by the drying up of the moisture by means of the surrounding fire; the rest, having become salt and bitter, running off into the sea.[2] Its shape he conceives as a cylinder, the height of which is a third part of its breadth; we inhabit its upper surface.[3] At rest in the centre of all things, its equilibrium is maintained because it is equally distant from the extreme limits of the universe.[4] The animals also, he thought, originated from primitive slime, under the influence of the sun's heat, and as the idea of a gradual succession of animal species corresponding with the periods of geological formation was naturally beyond his reach, he assumed that the land animals, including man, had at first been fishes, and afterwards, when they were able to develope themselves under their new shape, had come on shore and thrown off their scales.[1] He is said to have regarded the soul as of the nature of air,[2] and we have no reason to think this improbable; what, however, is more certain, is that in his theories of the origin of rain, of the winds, of thunder and lightning,[3] almost everything is referred to the influence of air. But these theories have little connection with his philosophic doctrine.

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[1] Cicero, *N. D.* i. 10, 25 (after Philodemus), *Anaximandri autem opinio est nativos esse Deos, longis intervallis orientes occidentesque eosque innumerabiles esse mundos.* *Plac.* i. 7, 12: Ἀναξίμανδρος τοὺς ἀστέρας οὐρανίους θεούς. Stob. in the parallel passage *Ecl.* i. 56: Ἀναξίμανδρος ἀπεφήνατο τοὺς ἀπείρους οὐρανοὺς θεούς; Ps Galen. *Hist. Phil.* c. 8, p. 251 K: Ἀναξίμανδρος δὲ τοὺς ἀπείρους νοῦς (Heeren in Stobæus, *loc. cit.* rightly substitutes οὐρανοὺς for νοῦς) θεοὺς εἶναι; Cyrill, c. Jul. i. p. 28 D: Ἀναξίμανδρος θεὸν διορίζεται εἶναι τοὺς ἀπείρους κόσμους. Tert. *Adv. Marc.* i. 13: *Anaximander universa cælestia* (*Deos pronuntiavit*). How we are to understand the infinite number of these gods we shall soon more particularly enquire.

[2] Vide *supra*, p. 251, 1.

[3] Plutarch in Eus. *Pr. Ev.* i. 8, 2; *Plac.* iii. 10, 1; Hippolyt. *Refut.* i. 6. Diogenes (ii. 1) makes the form of the earth spherical instead of cylindrical, but this is an error. Teichmüller goes thoroughly into the subject, *loc. cit.* 40 sqq.

[4] Arist. *De Cælo*, ii. 13, 295 b, 10; Simpl. in h. l. 237 b, 45 sq.; *Schol.* 507 b, 20; Diog. ii. 1; *Hippolyt.*, *loc. cit.* The assertion of Theo. (*Astron.* p. 324), taken by him from Dercyllides, that Anaximander thought the earth moved around the centre of the universe, is a misapprehension of what he (Anaximander) said as to the suspension (ap. Simpl. *loc. cit.*) of the earth. Alexander expresses himself more cautiously.

As all things were produced from one primitive matter, so must all return to it; for all things, says our philosopher,[4] must undergo, according to the order of time, penance and punishment for their injustice. The separate existence of individual things is, so to speak, a wrong, a transgression which they must expiate by their destruction. Anaxagoras is said to have applied the same principle to the world as a whole, and to have admitted, in consequence, that the world would be destroyed, but that on account of the perpetual motion of the infinite substance, a new world would be formed; so that there would thus be an endless series of successive worlds. This matter, however, is open to dispute.[1] We are repeatedly assured that Anaximander spoke of innumerable worlds, but whether he meant by this, worlds in juxtaposition, or worlds in succession,—and whether, upon the former theory, he thought of a number of complete systems, separate from each other, or only different parts of one and the same system, are questions that are not easily answered.[2] Cicero says that Anaximander regarded the countless worlds as gods. This would incline us to the idea of whole systems, like the worlds of Democritus. The countless 'heavens' of which Stobæus speaks (as also the Pseudo-Galen) seem to necessitate the same interpretation, since Cyrillus substitutes 'worlds' for 'heavens.' The *Placita*, however, have the word 'stars,' and this we must take to have been Anaximander's real meaning. For if he had said the innumerable worlds that are supposed to exist outside our system are gods, he would not merely have stood alone among all the ancient philosophers, but it would be difficult to say how he could have arrived at such a theorem. For in all periods, and without exception, gods have been understood to mean beings that are the objects of human adoration: even the gods of Epicurus are so, though, on their side, they trouble themselves little about men.[3] But these worlds, entirely withdrawn from our perceptions and sight, and admitted only on the strength of a speculative hypothesis, are not capable of inspiring our adoration, and have nothing in themselves that could appeal to the feeling of piety; whereas the ancient worship of the stars, deeply rooted as it was in the Hellenic modes of thought, is to be met with perpetually, as we know, among the philosophers. Anaximander's countless gods must, therefore, be the stars. The explanation of his likewise calling these gods 'heavens' may be found in what we have gathered about his conception of the stars. That which we behold under the form of sun, moon, or stars, is to Anaximander only a luminous aperture in a ring which is formed of air and filled with fire, and rotates at a greater or less distance around the earth. The concentric light-emitting rings which thus surround us, and together with the earth form the universe, might therefore be properly called heavens, and perhaps they might be called worlds;[1] but it is likewise possible that later writers, adopting the language of their own times, may have substituted 'worlds' for 'heavens' by way of explanation or emendation. Besides, Anaximander might well speak in this sense of an infinite number of heavens, since (in accordance with this theory) he must have regarded the fixed stars, not as placed in a single sphere,[2] but each one as the aperture of its own ring. For at so early a period as Anaximander's, it ought not to surprise us if that which no man could reckon were called infinite in number.

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[1] Vide Plutarch ap. Eus. *loc. cit.*; *Qu. Con.* viii. 8, 4; *Plac.* v. 19. 4; also Brandis, i. 140, but especially Teichmüller, *loc. cit.* 63 sqq., who rightly calls attention to the points of contact between this hypothesis and the Darwinian theory. But I cannot follow him in his statement (p. 68) that Anaximander, according to Plutarch, *Qu. conv.* forbade the eating of fish. Plutarch does not seem to me to say that Anaximander expressly interdicted fish eating, but only that his doctrine of the descent of men from fishes implied that the use of fish as food was unlawful.

[2] Theod. *Gr. aff. cur.* v. 18, p. 72.

[3] Plutarch, *Plac.* iii. 3, 1, 7, 1; Stob. *Ecl.* i. 590; Hippolyt. *loc. cit.*; Seneca, *Qu. Nat.* ii. 18 sq.; Achilles Tatius in Arat. 33; Plin. *Hist. Nat.* ii. 79, 191, makes Anaximander foretell an earthquake to the Spartans, but adds significantly 'Si credimus.'

[4] In the fragment quoted, p. 240, 2.

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[1] Vide Schleiermacher, *loc. cit.* 196 sq.; Krische, *Forsch.* i. 44 sqq.

[2] Vide the texts given, *supra*, p. 255, 1.

[3] Cf. Part III. a, 395, second edition.

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[1] Simplicius, for example, says (in the passage quoted *supra*, p. 233, 1) of Anaxagoras, to whom nobody attributed the theory of several systems, that *νοῦς*, according to him, produced *τούς τε κόσμους καὶ τὴν τῶν ἄλλων φύσιν.*

[2] Such a sphere must have been perforated like a sieve, since each star indicates an opening in it; and (according to p. 254, 2) it would have hidden the sun and moon from us.

On the other hand, the assertion which ascribes to Anaximander an infinity of successive worlds seems to be borne out by his system. The correlative of the world's formation is the world's destruction; if the world, as a living being, developed itself at a definite epoch out of a given matter, it may easily be supposed that it will also be dissolved, like a living being, into its constituent elements again. If creative force and movement, as essential and original qualities, be ascribed to this primitive matter, it is only logical to conclude that by virtue of its vitality it will produce another world after the destruction of our own; and for the same reason it must have produced other worlds prior to the earth. Thus we assume an infinite series of successive worlds in the past and in the future. Plutarch, indeed, expressly says of Anaximander, that from the Infinite, as the sole cause of the birth and destruction of all things, he considered that the heavens and the innumerable worlds arise in endless circulation,[1] and Hippolytus speaks to the same effect.[2] 'The Infinite of Anaximander,' he says, 'eternal and never growing old, embraces all the worlds; but these have each of them a set time for their arising, their existence, and their destruction.'[1] Cicero, too,[2] makes mention of innumerable worlds, which in long periods of time arise and perish; and Stobæus attributes to Anaximander the theory of the future destruction of the world.[3] This is also countenanced by the statement that he believed in a future drying up of the sea,[4] for in that case there would be an increasing preponderance of the fiery element, which must ultimately result in the destruction of the earth, and of the system of which it forms the centre. The same theory of a constant alternation of birth and destruction in the universe was held by Heracleitus, who approaches more closely to Anaximander than to any of the ancient Ionian physicists, and also most probably by Anaximenes and Diogenes. We have reason, therefore, to suppose that Anaximander also held it; and that he already taught the doctrine of a perpetual vicissitude between the separation of things from the primitive matter, and their return to primitive matter; as well as an endless series of worlds in succession, which was the natural result of that doctrine.[1]

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[1] Ap. Eus. *Pr. Ev.* i. 8, 1: (Ἀναξίμανδρόν φασι) τὸ ἄπειρον φάναι τὴν πᾶσαν αἰτίαν ἔχειν τῆς τοῦ παντὸς γενέσεώς τε . . . καὶ φθορᾶς. ἐξ οὗ δή φησι τούς τε οὐρανοὺς ἀποκεκρίσθαι καὶ καθόλου τοὺς ἅπαντας ἀπείρους ὄντας κόσμους. ἀπεφήνατο δὲ τὴν φθορὰν γίνεσθαι καὶ πολὺ πρότερον τὴν γένεσιν ἐξ ἀπείρου αἰῶνος ἀνακυκλουμένων πάντων αὐτῶν.

[2] *Refut.* i. 6: οὗτος ἀρχὴν ἔφη τῶν ὄντων φύσιν τινὰ τοῦ ἀπείρου, ἐξ ἧς γίνεσθαι τοὺς οὐρανοὺς καὶ τοὺς ἐν αὐτοῖς κόσμους. ταύτην δ' ἀΐδιον εἶναι καὶ ἀγήρω, ἣν καὶ πάντας περιέχειν τοὺς κόσμους. λέγει δὲ χρόνον ὡς ὡρισμένης τῆς γενέσεως καὶ τῆς οὐσίας καὶ τῆς φθορᾶς. These propositions seem, by the way, to be taken from another source from what follows.

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[1] In neither of these passages can the innumerable worlds be understood otherwise than as successive worlds. When Hippolytus directly connects with his mention of the *κόσμοι* the remark that the time of their beginning is determined, this can only mean that these *κόσμοι* have a definite duration, and we must then explain the plurality thus: there are many worlds, because each world only lasts for a time. The connection of the two propositions, that the *ἄπειρον* is eternal, and that it embraces all worlds—points to the same result. It might embrace all coexisting worlds even if it were not eternal; but it could only embrace successive worlds, if it outlasted them all. With Plutarch, the arising or passing away *τοῦ παντὸς* and the *ἀνακυκλουμένων πάντων αὐτῶν*, sufficiently show that successive worlds are intended.

[2] In the passage quoted at length, *supra*, p. 255, 1, where the words, *longis intervallis orientes occidentesque*, can only apply to worlds of which one arises when the other disappears, even supposing that Cicero or his authority confused these worlds with the *ἄπειροι οὐρανοὶ* designated as gods by Anaximander.

[3] Ecl. i. 416. Anaximander . . . *φθαρτὸν τὸν κόσμον*.

[4] Theophrastus, and probably also Aristotle, *supra*, p. 151, 1.

Whether he likewise maintained the co-existence of an infinite number of systems, or of a plurality of systems apart from one another, as the Atomists afterwards did, is another question. Simplicius, and apparently Augustine, assert this of him;[2] and some few modern writers have agreed with them.[3] But Augustine certainly does not speak from his own knowledge, and he does not tell us his authority. Nor is Simplicius quoting from Anaximander's writings,[1] and he clearly betrays that he is not sure of what he is saying.[2] No trustworthy evidence from any other source can be cited in favour of this philosopher's having held such a theory,[3] a theory which his general system not merely does not require, but often actually contradicts. We might imagine that it necessarily resulted from the unlimitedness of matter; but the successors of Anaximander, Anaximenes, Anaxagoras, and Diogenes, prove how little such necessity existed at that early stage of thought. None of them find any difficulty in supposing our world to be limited, while the matter surrounding it, and not formed into any other worlds, extends itself to infinity. The reflection which Schleiermacher attributes to our philosopher,[1] that there must be many worlds, in order that death and destruction may rule in one, while life and vitality prevail in another, appears much too artifical for the time. It is, therefore, difficult to see how Anaximander could have been led to a theory which is so entirely independent of the sensible intuition, the immediate origin of all ancient cosmology. Such a theory must, indeed, have been peculiarly remote from a philosopher holding so decidedly, as Anaximander did, that every particular was derived from one first principle, and returned to it again.[2] Democritus was quite logical when he made his innumerable atoms, which were guided by no uniform principle, combine with one another in the most diverse parts of infinite space, and so form independent world-systems. Anaximander, on the contrary, starting from his conception of the One Unlimited which rules all things, could only arrive at the theory of a single universe, combined by the unity of the force that forms the world.

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[1] What Schleiermacher urges (*loc. cit.* 197) against this theory does not seem to me conclusive. Anaximander, he thinks (according to the texts quoted, *supra*, p. 229, 2, 3), could not have supposed a time in which generation was arrested, and this must have been the case from the commencement of a world's destruction to the arising of a new world. But in the first place, the words, *ἵνα ἡ γένεσις μὴ ἐπιλείπῃ*, do not assert that 'generation may never and in no way be arrested,' but rather that 'the generation of perpetually new beings can never cease.' It does not cease if it is continued in a new world instead of the one destroyed; and thus it becomes very questionable whether we can attribute to Anaximander a notion which, strictly understood, would exclude a beginning as well as an end of the world; namely, the notion that on account of the incessant activity of the first cause (vide *sup.* p. 249, 1) the world can never cease to exist. He might think that he was proving this activity all the more conclusively by making it always form a new world after the destruction of an old one. Rose's opinion (*Arist. lib. ord.* 76) that the theory of an alternative formation and destruction of worlds is a *vetustissima cogitandi ratione plane aliena* has been already answered in the text. We find this theory in Anaximenes, Heracleitus, and Diogenes (to all of whom, however, Rose equally denies it); and moreover in Empedocles.

[2] Simpl. *Phys.* 257 b: *οἱ μὲν γὰρ ἀπείρους τῷ πλήθει τοὺς κόσμους ὑποθέμενοι, ὡς οἱ περὶ Ἀναξίμανδρον καὶ Λεύκιππον καὶ Δημόκριτον καὶ ὕστερον οἱ περὶ Ἐπίκουρον, γινομένους αὐτοὺς καὶ φθειρομένους ὑπέθεντο ἐπ' ἄπειρον, ἄλλων μὲν ἀεὶ γινομένων ἄλλων δὲ φθειρομένων.* Cf. *inf.* p. 262, 2. Aug. *Civ. D.* viii. 2: *rerum principia singularum esse credidit infinita, et innumerabiles mundos gignere et quaecunque in eis oriuntur, eosque mundos modo dissolvi modo iterum gigni existimavit, quanta quisque aetate sua manere potuerit.*

[3] Büsgen especially, p. 18 sq. of the work mentioned (*supra*, p. 235, 1).

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[1] As already observed on p. 237 sq., and clearly proved by the contradictions resulting from the comparison of the expressions shown to be his, *supra*, pp. 233, 1; 241, 6; 244, 1, 2.

[2] Cf. *De Cœlo*, 91 b, 34 (*Schol. in Ar.* 480 a, 35): οἱ δὲ καὶ τῷ πλήθει ἀπείρους κόσμους, ὡς Ἀναξίμανδρος μὲν ἄπειρον τῷ μεγέθει τὴν ἀρχὴν θέμενος, ἀπείρους ἐξ αὐτοῦ [—τῆς] τῷ πλήθει κόσμους ποιεῖν δοκεῖ. Λεύκιππος δὲ καὶ Δημόκριτος ἀπείρους τῷ πλήθει τοὺς κόσμους, &c. *Ibid.* 273, b 43: καὶ κόσμους ἀπείρους οὗτος καὶ ἕκαστον τῶν κόσμων ἐξ ἀπείρου τοῦ τοιούτου στοιχείου ὑπέθετο, ὡς δοκεῖ.

[3] The state of the case in regard to Cicero and Philodemus has already been investigated, pp. 257; 260, 2; where the passages cited (p. 259, 1, 2) from Hippolytus and Plutarch have also been sufficiently considered. Plutarch indeed says in the preterite: τούς τε οὐρανοὺς ἀποκεκρίσθαι καὶ καθόλου τοὺς ἅπαντας ἀπείρους ὄντας κόσμους, but that proves nothing; for in the first place the κόσμοι may have the same meaning as οὐρανοί (cf. p. 258), and in the next, it might be said of successive worlds that an infinite number of them had come forth from the ἄπειρον; for they had already been innumerable in the past. It has also been shown (p. 257) that Stobæus, i. 56, proves nothing. When Stobæus (i. 496) says Ἀναξίμανδρος Ἀναξιμένης Ἀρχέλαος Ξενοφάνης Διογένης Λεύκιππος Δημόκριτος Ἐπίκουρος ἀπείρους κόσμους ἐν τῷ ἀπείρῳ κατὰ πᾶσαν περιαγωγήν. τῶν δ' ἀπείρους ἀποφηναμένων τοὺς κόσμους Ἀναξίμανδρος τὸ ἴσον αὐτοὺς ἀπέχειν ἀλλήλων, Ἐπίκουρος ἄνισον εἶναι τὸ μεταξὺ τῶν κόσμων διάστημα, his meaning no doubt is that Anaximander, like Democritus and Epicurus, believed in numberless coexistent worlds, and this likewise holds good of Theodoret (*Cur. gr. aff.* iv. 15, p. 58), who attributes to the same philosophers, enumerated in the same order as Stobæus, πολλοὺς καὶ ἀπείρους κόσμους. Theodoret, however, is evidently not an independent witness, but has been drawing upon the text, the words of which Stobæus gives more completely. The account itself also seems here to be very untrustworthy. For little confidence can be placed in an author who attributes the ἄπειροι κόσμοι to Anaximenes, Archelaus, and Xenophanes, and by the addition of κατὰ πᾶσαν περιαγωγήν, which is quite inapplicable to the Atomists and Epicureans, clearly betrays that he is here confusing two different theories, that which makes innumerable successive worlds to proceed from the περιαγωγαί (the circular motion spoken of by Plutarch, *supra*, p. 259, 1), and that which maintains innumerable contemporaneous worlds. What Anaximander really said concerning the equal distance of the worlds, whether his utterance related to the distance in space of

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the *οὐρανοὶ*, or to the distance in time of the successive worlds, we cannot determine.

[1] *Loc. cit.* p. 200 sq.

[2] As Schleiermacher himself acknowledges, *loc. cit.* 197, 200.

If we now compare Anaximander's doctrine, as represented in our present enquiry, with what we know of the doctrine of Thales, we shall find that it is far richer in content, and betokens a higher development of philosophic thought. I am not indeed inclined to ascribe any great significance to the conception which is principally dwelt on by historians as constituting the most convenient designation for Anaximander's principle, viz., the infinity of primitive matter; for the endless succession of natural creations, which chiefly determined Anaximander in adopting it, might have been attained independently of this principle;[1] and the unlimited extension of the world in space, which would have necessitated it, was not taught, as we have seen, by this philosopher. On the other hand, it is an important fact that Anaximander should have taken for his point of departure, not a determinate substance like Thales, but indeterminate and infinite matter; and whatever may have led him to such a doctrine, it implies an advance on his part beyond merely sensuous observation. Thales said nothing about the manner in which things arise out of the primitive matter. The 'separation' of Anaximander is still sufficiently vague, but it is at any rate an attempt to form some notion of the process, to reduce the multiplicity of phenomena to the most general oppositions, and to attain a physical theory of the genesis of the world, free from the mythical elements of the ancient theogonic cosmology. The ideas of Anaximander on the system of the world, and the origin of living beings, not only show reflection, but have exercised important influence on subsequent philosophy. Finally, he admitted a beginning as well as an end of our world, and an infinite series of successive worlds. This doctrine evinces remarkable consistency of thought. It is besides the first step towards the abandonment of the mythical notion of the origin of the world in time, and through the idea that creative force can never have been idle, it prepared the way for the Aristotelian doctrine of the eternity of the world.

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[1] As Aristotle observes, vide *supra*, p. 229, 3.

I cannot, however, agree in the opinion that Anaximander should be separated from Thales and from his successors, and assigned to a special order of development. This opinion has been maintained in modern times and on opposite grounds by Schleiermacher[1] and Ritter:[2] by Schleiermacher, because he sees in Anaximander the commencement of speculative natural science; by Ritter, because he regards him as the founder of the mechanical and more experimental physics. With reference to the latter, it has already been shown that Anaximander's theory of nature has as little a mechanical character as that of his predecessor or immediate successors, and that he especially approximates to Heracleitus, the typical dynamist. For the same reasons, Schleiermacher is incorrect in asserting that, in contrast with Thales and Anaximenes, his tendency is more towards the particular than the universal; for Anaximander was remarkably strict in upholding the unity of animate nature.[3] He admits, indeed, that contraries emanate from the primitive substance; but this proves nothing, since Anaximenes and Diogenes hold the same opinion. Lastly, I must dispute the assertion of Ritter[1] that Anaximander owed nothing to Thales. Even supposing that from a material point of view he appropriated none of Thales' ideas, it was formally of the highest importance that Thales should first have instituted the enquiry concerning the universal principle of all things. We have, however, already seen that Anaximander was probably connected with Thales, not only by his hylozoism, but by the particular theory of the liquid state of the earth in its commencement. If we farther consider that he was a fellow citizen and younger contemporary of Thales, and that both philosophers were well known and highly esteemed in their native city, it seems unlikely that no impulse should have been received by the younger from the elder; and that Anaximander, standing midway chronologically between his two compatriots, Thales and Anaximenes, should be isolated from them scientifically. The contrary will become still more apparent when we see the influence exercised by Anaximander over his own immediate successor.

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[1] On Anaximander, *loc. cit.* p. 188; *Gesch. der Phil.* 25, 31 sq.

[2] *Gesch. der Phil.* i. 214, 280 sqq., 345; cf. *Gesch. der Ion. Phil.* 177 sq., 202.

[3] Vide *supra*, p. 256, and Schleiermacher on Anaximander, p. 197, who is styled by him the

III. *ANAXIMENES.*[2]

The philosophic theory of Anaximenes is generally described by the proposition that the principle or ground

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philosopher 'whose whole enquiry inclines so decidedly to the side of unity and the subordination of all oppositions.'

[1] *Gesch. der Phil.* i. 214.

[2] Of the life of Anaximenes we know hardly anything, except that he came from Miletus, and that his father's name was Euristratus (Diog. ii. 3; Simpl. *Phys.* 6 a). Later writers represent him as a disciple (Cic. *Acad.* ii. 37, 118;

of all things is air.[1] That he meant by air something different from the element of that name, and distinguished air, the elementary substance, from the atmospheric air,[2] cannot be proved, nor is it probable. He says indeed that air in its pure condition is invisible, and that it is only perceptible through the sensations of its coldness, warmth, moisture, and motion;[3] but this

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Diog. ii. 3; Aug. *Civ. D.* viii. 2); friend (Simpl. *loc. cit. De Cœlo*, 273 b, 45; *Schol.* 514 a, 33); acquaintance (Eus. *Pr. Ev.* x. 14, 7); or successor (Clem. *Strom.* i. 301 A. Theodoret, *Gr. aff. cur.* ii. 9, p. 22, Aug. *l. c.*) of Anaximander. Though it is probable, from the relation of their doctrines, that there was some connection between the two philosophers, these statements are clearly based, not on historical tradition, but on a mere combination, which, however, has more foundation than the strange statement (ap. Diog. ii. 3) that he was a pupil of Parmenides. According to Apollodorus, in Diog. *loc. cit.*, he was born in the 63rd Olympiad (528–524 B.C.), and died about the time of the conquest of Sardis. If by the latter is meant the conquest by the Ionians under Darius in the 70th Olympiad (499 B.C.), which is used nowhere else as a chronological epoch, Anaximenes would have died 45–48 years after Anaximander; on the other hand, in that case, Ol. 63 would seem much too late for his birth. To obviate this difficulty Hermann (*Philos. Ion. æt.* 9, 21) proposes to substitute for Ol. 63, Ol. 55 (as given in Euseb. *Chron.*); and Röth (*Gesch. der Abendl. Phil.* ii. a. 242 sq.) Ol. 53. As, however, Hippolytus (*Refut.* i. 7, end) places the prime of Anaximenes in Ol. 58, 1, Diels (*Rhein. Mus.* xxxi. 27) is probably right in his conjecture that the passage in Diogenes should be thus transposed: γεγένηται μὲν . . . . περὶ τὴν Σάρδεων ἅλωσιν, ἐτελεύτησε δὲ τῇ ἑξηκοστῇ τρίτῃ ὀλυμπιάδι, and that Suidas thence derives his statement: γέγονεν ἐν τῇ νε′ ὀλυμπιάδι ἐν τῇ Σάρδεων ἁλώσει ὅτε Κῦρος ὁ Πέρσης Κροῖσον καθεῖλεν. Only, says Diels, Suidas or some later interpolator has wrongly introduced Eusebius's date ἐν τῇ νε′ ὀλυμπιάδι.' The conquest of Sardis that Diogenes means is the conquest by Cyrus (Ol. 58, 3, or 546 B.C.), and the word, γέγονεν, or γεγένηται (as is often the case) relates not to the birth, but to the time of life, the ἀκμή. The work of Anaximenes, a small fragment of which has been handed down to us, was, according to Diogenes, written in the Ionic dialect; the two insignificant letters to Pythagoras, which we find in Diogenes, are of course apocryphal.

[1] Arist. *Metaph.* i. 3, 984 a, 5, Ἀναξιμένης δὲ ἀέρα καὶ Διογένης πρότερον ὕδατος καὶ μάλιστ' ἀρχὴν τιθέασι τῶν ἁπλῶν σωμάτων, and all later writers without exception.

[2] As is assumed by Ritter, i. 217, and still more decidedly by Brandis, i. 144.

[3] Hippolyt. *Refut. hær.* i. 7: Ἀναξιμένης δὲ . . . ἀέρα ἄπειρον ἔφη

is perfectly applicable to the air around us, and our authorities evidently so understand it, for they none of them ever allude to such a distinction, and the majority of their texts expressly designate the primitive matter of Anaximenes as one of the four elements, as a qualitatively determined body.[1] On the other hand, he ascribed one property to the air, which Anaximander had already employed to discriminate primitive being from all things derived; he defined it as infinite in regard to quantity. This is not only universally attested by later writers,[2] but Anaximenes himself implies such an opinion[3] in saying that the air embraces the whole world; for when the air is conceived as not comprehended by the vault of heaven, it is much easier to imagine it spread out to infinity than to place any definite bound to so volatile a substance. Moreover

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τὴν ἀρχὴν εἶναι, ἐξ οὗ τὰ γενόμενα τὰ γεγονότα καὶ τὰ ἐσόμενα καὶ θεοὺς καὶ θεῖα γίνεσθαι, τὰ δὲ λοιπὰ ἐκ τῶν τούτου ἀπογόνων. τὸ δὲ εἶδος τοῦ ἀέρος τοιοῦτον· ὅταν μὲν ὁμαλώτατος ᾖ, ὄψει ἄδηλον, δηλοῦσθαι δὲ τῷ ψυχρῷ καὶ τῷ θερμῷ καὶ τῷ νοτερῷ καὶ τῷ κινουμένῳ.

[1] E. g. Aristotle, *loc. cit.*, and *Phys.* i. 4; Plut. ap. Eus. *Pr. Ev.* i. 8, 3: *Ἀναξιμένην δέ φασι τὴν τῶν ὅλων ἀρχὴν τὸν ἀέρα εἰπεῖν καὶ τοῦτον εἶναι τῷ μὲν γένει ἄπειρον ταῖς δὲ περὶ αὐτὸν ποιότησιν ὡρισμένον.* Simpl. *Phys.* 6 a, u: *μίαν μὲν τὴν ὑποκειμένην φύσιν καὶ ἄπειρόν φησιν . . . οὐκ ἀόριστον δὲ . . . ἀλλὰ ὡρισμένην, ἀέρα λέγων αὐτήν.* So *De Cœlo*, vide *infra*, p. 270, 3.

[2] Plut. and Hippol., vide the two previous notes. Cic. *Acad.* ii. 37, 118: *Anaximenes infinitum aera; sed ea, quæ ex eo orirentur definita.* *N. D.* i. 10, 26: *Anaximenes aera deum statuit, eumque gigni* (a misapprehension on which cf. Krische, i. 55) *esseque immensum et infinitum et semper in motu*; Diog. ii. 3: *οὗτος ἀρχὴν ἀέρα εἶπε καὶ τὸ ἄπειρον*; Simplicius, *Phys.* 5 b: *Ἀναξίμανδρον, καὶ Ἀναξιμένην . . . ἓν μὲν, ἄπειρον δὲ τῷ μεγέθει τὸ στοιχεῖον ὑποθεμένους*; *ibid.* 6 a, vide preceding note; *ibid.* 105 b, vide *supra*, p. 219, 1; *ibid.* 273 b: *ἐν τῷ ἀπείρῳ . . . τῷ Ἀναξιμένους καὶ Ἀναξιμάνδρου.* Also Simplicius, *De Cœlo*, vide *infra*; *ibid.* 91 b, 32 (*Schol.* 480 a, 35): *Ἀναξιμένης τὸν ἀέρα ἄπειρον ἀρχὴν εἶναι λέγων.*

[3] In the words quoted by Plut. *Plac.* i. 3, 6 (Stob. *Ecl.* i. 296): *οἷον ἡ ψυχὴ ἡ ἡμετέρα ἀὴρ οὖσα συγκρατεῖ ἡμᾶς, καὶ ὅλον τὸν κόσμον πνεῦμα καὶ ἀὴρ περιέχει.*

Aristotle[1] mentions the theory according to which the world is surrounded by the boundless air. This passage, it is true, may also apply to Diogenes or Archelaus, but Aristotle seems to ascribe the infinity of primitive matter to all those who consider the world to be surrounded by this matter. We can scarcely doubt therefore that Anaximenes adopted this conception of Anaximander. He also agrees with him in the opinion that the air is in constant movement, is perpetually changing its forms,[2] and consequently perpetually generating new things derived from it; but what kind of movement this is, our authorities do not inform us.[3] Lastly, it is said of him, as of Anaximander, that he declared his primitive matter to be the divinity;[1] whether he expressly did so is questionable and improbable, since like his predecessor (vide *supra*) he reckoned the gods among created beings. But in point of fact, the statement is not untrue, because, for him also, primitive matter was at the same time primitive force, and so far, the creative cause of the world.[2]

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[1] *Phys.* iii. 4; vide *supra*, p. 219, 2; *ibid.* c. 6, 206 b, 23: ὥσπερ φασὶν οἱ φυσιολόγοι, τὸ ἔξω σῶμα τοῦ κόσμου, οὗ ἡ οὐσία ἢ ἄλλο τι τοιοῦτον, ἄπειρον εἶναι. Cf. also the passage quoted on p. 242, 1; *De Cœlo*, iii. 5.

[2] Plutarch ap. Eus. *Pr. Ev.* i. 8, according to the quotation on p. 268, 1: γεννᾶσθαι δὲ πάντα κατά τινα πύκνωσιν τούτου, καὶ πάλιν ἀραίωσιν. τήν γε μὴν κίνησιν ἐξ αἰῶνος ἀπάρχειν. Cic. *N. D.* i. 10 (note 1). Hippolyt. according to the quotation, *sup.* p. 268, 1: κινεῖσθαι δὲ καὶ ἀεί· οὐ γὰρ μεταβάλλειν ὅσα μεταβάλλει, εἰ μὴ κινοῖτο. Simpl. *Phys.* 6 a: κίνησιν δὲ καὶ οὗτος ἀΐδιον ποιεῖ δι' ἣν καὶ τὴν μεταβολὴν γίνεσθαι. The reason why he was nevertheless reproached, Plut. *Plac.* i. 3, 7, for recognising no moving cause, is well explained by Krische, *Forsch.* 54, in reference to Arist. *Metaph.* i. 3, 984 a, 16 sqq.

[3] Teichmüller (*Studien*, &c. p. 76 sqq.) thinks, as in regard to Anaximander (*sup.* p. 252, 1), that this was a revolving motion; that the infinite air was supposed to rotate from eternity. I cannot acquiesce in this view, if only for the reason that not one of our authorities recognises such a theory. A rotation of the Unlimited seems to me in itself so contradictory a notion that we ought not to ascribe it to Anaximenes, except on overwhelming evidence; if we would represent to ourselves the eternal motion of matter, the analogy of the atmospheric air would far more readily support the theory of a swinging movement. Teichmüller appeals to Arist. *De Cœlo*, ii. 13, 295 a, 9: (ὥστ' εἰ βίᾳ νῦν ἡ γῆ μένει, καὶ συνῆλθεν ἐπὶ τὸ μέσον φερομένη διὰ τὴν δίνησιν· ταύτην γὰρ τὴν αἰτίαν πάντες λέγουσιν, διὸ δὴ καὶ τὴν γῆν πάντες ὅσοι τὸν οὐρανὸν γεννῶσιν, ἐπὶ τὸ μέσον συνελθεῖν φασίν); but this passage (even apart from what will be observed concerning it later on) seems to me of small importance in the question; for it does not say whether the whirling motion which, in the formation of the world car-

Simplicius says[3] that Anaximenes made air his first principle because of its variable nature, which especially fits it to be the substratum of changing phenomena. According to the utterances of Anaximenes himself,[4] he seems to have been led to this theory chiefly by the analogy of the world with a living being. It appeared to him (in agreement with the ancient opinion, founded on the evidence of the senses) that in men and animals the expiration and inspiration of the air is the cause of life, and of the cohesion of the body; for when the breathing ceases or is hindered, life becomes extinct,

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ried the terrestrial substances into the centre, existed before these substances; and this by no means necessarily follows. Democritus, for instance, does not conceive the atoms as originally whirling; that movement arises only at certain points from the percussion of the atoms.

[1] Cicero, *N. D. loc. cit.*; Stob. *Ecl.* i. 56: 'Αναξ. τὸν ἀέρα (θεὸν ἀπεφήνατο); Lactantius, *Inst.* i. 5, p. 18: Bip. *Cleanthes et Anaximenes aethera dicunt esse summum Deum.* Here, however, æther is used in the modern sense, Tert. *contr. Marc.* i. 13, *Anaximenes aerum* (*Deum pronuntiavit*).

[2] Röth (*Gesch. der Abendl. Phil.* ii. a, 250 sqq.) opposes Anaximenes to Xenophanes, and says that he started from the concept of spirit as the primitive divinity. He calls him accordingly the first spiritualist. But this gives a very false notion of the import of his principle, and the way in which he arrived at it.

[3] *De Cœlo*, 273 b, 45; *Schol. in Arist.* 514 a, 33: Αναξίμενης δὲ ἑταῖρος 'Αναξιμάνδρου καὶ πολίτης ἄπειρον μὲν καὶ αὐτὸς ὑπέθετο τὴν ἀρχὴν, οὐ μὴν ἔτι ἀόριστον, ἀέρα γὰρ ἔλεγεν εἶναι, οἰόμενος ἀρκεῖν τὸ τοῦ ἀέρος εὐαλλοίωτον πρὸς μεταβολήν.

[4] Vide *supra*, p. 268, 3.

the body decomposes and perishes. It was natural for Anaximenes to suppose that such might also be the case with the world. For the belief that the world was animate was very ancient, and had already been introduced into physics by his predecessors. So in the manifold and important effects of the air, which are patent to observation, he readily found proof that it is the air which moves and produces all things. But philosophy had not yet attained to the discrimination of motive cause from matter. The above announcement, therefore, was equivalent to saying that the air is the primitive matter; and this theory was likewise supported by common observation, and by a conjecture which might easily occur to the mind. Rain, hail, and snow, on the one hand, and fiery phenomena on the other, may equally be regarded as products of the air. Thus the idea might easily arise that the air must be the matter out of which all the other bodies are formed, some of them tending upwards, and others downwards; and this opinion might likewise be based on the apparently unlimited diffusion of the air in space, especially as Anaximander had declared the infinite to be the primitive substance.

All things then, says Anaximenes, spring from the air by rarefaction or by condensation.[1] These processes he seems to have regarded as resulting from the movement of the air.[1] Rarefaction he makes synonymous with heating, and condensation with cooling.[2] The stages through which matter has to pass in the course of these transformations he describes somewhat unmethodically. By rarefaction air changes into fire; by condensation it becomes wind, then clouds, then water, then earth, lastly stones. From these simple bodies compound bodies are then formed.[3] The texts

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[1] Aristotle (*Phys.* i. 4, sub init. *De Cælo*, iii. 5, sub init. vide *supra*, p. 243, 1) ascribes this theory to a whole class of natural philosophers. It was so peculiar to Anaximenes that Theophrastus assigns it to him alone (perhaps, however, he means alone among the earliest philosophers), vide *supra*, p. 224, 2. For further testimony, cf. Plut. *De Pr. Frig.* 7, 3, *supra*, p. 272, 2; Plut. ap. Eus. *Pr. Ev.* i. 8, 3, *supra*, p. 269, 2; Hippolyt. *Refut.* i. 7; Hermias, *Irris.* c. 3; Simpl. *Phys.* 6 a; 32 a. The expressions by which rarefaction and condensation are designated are various. Aristotle says *μάνωσις* and *πύκνωσις*; in-

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stead of *μάνωσις*, Plutarch and Simplicius have *ἀραίωσις*, *ἀραιοῦσθαι*; Hermias has *ἀραιούμενος καὶ διαχεόμενος*; Hippolytus, *ὅταν εἰς τὸ ἀραιότερον διαχυθῇ*. According to Plutarch, *De Pr. Frig.* (cf. Simpl. *Phys.* 44 b), Anaximenes himself seems to have spoken of concentration, of relaxation, extension or loosening. The Anaximandrian doctrine of separation is only attributed to him in Mörbeke's retranslation (*Ald.* 46 a, m) of Simplicius; *De Cælo*, 91 b, 43; (*Schol.* 480 a, 44): the genuine text has instead *οἱ δὲ ἐξ ἑνὸς πάντα γίνεσθαι λέγουσι κατ' εὐθεῖαν* (so that the transmutation of matters only follows one direction, and does not go on in a circle, as with Heracleitus): *ὡς Ἀναξίμανδρος καὶ Ἀναξιμένης*. In *Phys.* 44 a, rarefaction and condensation are explained by Simplicius in his own name, as *σύγκρισις* and *διάκρισις*.

[1] Vide *supra*, p. 269, 2. cf. p. 270.

[2] Plut. *Pr. Frig.* 7, 3, p. 947: *ἢ καθάπερ Ἀναξιμένης ὁ παλαιὸς ᾤετο, μήτε τὸ ψυχρὸν ἐν οὐσίᾳ μήτε τὸ θερμὸν ἀπολείπωμεν, ἀλλὰ πάθη κοινὰ τῆς ὕλης · ἐπιγινόμενα ταῖς μεταβολαῖς τὸ γὰρ συστελλόμενον αὐτῆς καὶ πυκνούμενον ψυχρὸν εἶναί φησι, τὸ δὲ ἀραιὸν καὶ τὸ χαλαρὸν (οὕτω πως ὀνομάσας καὶ τῷ ῥήματι) θερμόν.* In support of this, as is further observed, Anaximenes urged that the air which is breathed out with the open mouth is warm, and that which is ejected in closing the lips is cold; the explanation given by Aristotle being that the one is the air inside the mouth, and the other the air outside it, Hippol. *loc. cit.* (p. 267, 3, and note 3, *infra*). According to Porphyry, ap. Simpl. *Phys.* 41 a, *Ald.* Anaximenes regarded the moist and the dry as fundamental contraries; this statement is, however, open to suspicion; the more so, because Simplicius bases it upon a hexameter, which he says emanated from Anaximenes, but which is elsewhere ascribed to Xenophanes (vide *infra*, chapter on Xenophanes), and which cannot have been taken from the prose of Anaximenes. Most likely, as Brandis thinks (*Schol.* 338 b, 31, *loc. cit.*), *Ξενοφάνην* should be substituted for *Ἀναξιμένην*.

[3] Simpl. *Phys.* 32 a; and previously in the same terms, p. 6 a: *Ἀναξιμένης ἀραιούμενον μὲν τὸν ἀέρα πῦρ γίνεσθαί φησι, πυκνούμενον δὲ ἄνεμον, εἶτα νέφος, εἶτα ἔτι μᾶλλον ὕδωρ, εἶτα γῆν, εἶτα λίθους, τὰ δὲ ἄλλα ἐκ τούτων.* Hippol.

therefore which suppose Anaximenes to have fixed the number of the elements at four,[1] are to be considered inexact as to this point.

In the formation of the world, the condensation of the air first produced the earth,[2] which Anaximenes conceived as broad and flat, like the slab of a table, and for that reason, supported by the air.[3] He ascribed

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after the passage quoted p. 267, 3: *πυκνούμενον γὰρ καὶ ἀραιούμενον διάφορον φαίνεσθαι· ὅταν γὰρ εἰς τὸ ἀραιότερον διαχυθῇ πῦρ γίνεσθαι, μέσως δὲ ἐπὰν εἰς ἀέρα πυκνούμενον ἐξ ἀέρος νέφος ἀποτελεσθῇ κατὰ τὴν πάλησιν*, instead of which, perhaps, we should read: *μέσως δὲ πάλιν εἰς ἀέρα, πυκν. ἐξ ἀέρ. νέφ. ἀποτελεῖσθαι κ. τ. πίλησιν*—as Röper (*Philol.* vii. 610), and Duncker (in his edition) contend—perhaps, however, *ἀνέμους* may be concealed in the *μέσως*, and the following words should be otherwise amended: *ἔτι δὲ μᾶλλον ὕδωρ, ἐπὶ πλεῖον πυκνωθέντα γῆν, καὶ εἰς τὸ μάλιστα πυκνότατον λίθους. ὥστε τὰ κυριώτατα τῆς γενέσεως ἐναντία εἶναι θερμόν τε καὶ ψυχρόν . . . . ἀνέμους δὲ γεννᾶσθαι, ὅταν ἐκπεπυκνωμένος ὁ ἀὴρ ἀραιωθεὶς φέρηται* (which no doubt means, when the condensed air spreads itself out anew; unless we should substitute for *ἀραιωθεὶς*, *ἀρθεὶς*, carried up aloft, which, in spite of the greater weight of the condensed air, would be quite as possible in itself as the presence (p. 274, 2) of earth-like bodies in the heavens), *συνελθόντα δὲ καὶ ἐπὶ πλεῖον παχυθέντα νέφη γεννᾶσθαι* [*γεννᾷν*, or, *συνελθόντος καὶ ἐπὶ πλεῖον παχυθέντος ν. γεννᾶσθαι*], *καὶ οὕτως εἰς ὕδωρ μεταβάλλειν.*

[1] Cic. *Acad.* ii. 37, 118: *gigni autem terram aquam ignem tum ex his omnia.* Hermias *loc. cit.*; Nemes. *Nat. Hom.* c. 5, p. 74, has the same, but less precisely.

[2] Plut. ap. Eus. *Pr. Ev.* i. 8, 3: *πιλουμένου δὲ τοῦ ἀέρος πρώτην γεγενῆσθαι λέγειν τὴν γῆν.* The same follows from the theory that the stars first arose out of the vapours of the earth. How the earth came first to be formed, and took its place in the centre of the universe, is not explained. The words *πιλουμένου τοῦ ἀέρος* in Plutarch admit of the notion that in the condensation of the air the densest parts sank downwards. Instead of this, Teichmüller (*loc. cit.* p. 83) prefers to account for it by the theory of the whirling motion (of which we have spoken *supra*, p. 269, 3); but the passage from Aristotle, *De Cœlo*, ii. 13, there quoted, does not seem to me to justify this course; for the word *πάντες* in this passage cannot be so strained as to include every individual philosopher who ever constructed a cosmogony. For example, Plato (*Tim.* 40 B) knows nothing of the *δίνησις*. Heracleitus never mentions it, and the Pythagoreans did not place the earth in the centre of the universe.

[3] Aristotle, *De Cœlo*, ii. 13, 294 b, 13; Plutarch ap. Eus. *loc. cit.*; *Plac.* iii. 10, 3, where Ideler, without any reason, would

the same form to the sun and stars, which he likewise thought were floating in the air;[1] in regard to their origin, he supposed that the increasing rarefaction of the vapours ascending from the earth produced fire; and that this fire, pressed together by the force of the rotation of the heavens, formed the stars, to which a terrestrial nucleus was therefore ascribed.[2] He is said to have been the first to discover that the moon takes her light from the sun, and the reason of lunar

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substitute Ἀναξαγόρας for Ἀναξιμένης, Hippol. *loc. cit.*

[1] Hippol. *loc. cit.*: τὴν δὲ γῆν πλατεῖαν εἶναι ἐπ' ἀέρος ὀχουμένην ὁμοίως δὲ καὶ ἥλιον καὶ σελήνην καὶ τὰ ἄλλα ἄστρα. πάντα γὰρ πύρινα ὄντα ἐποχεῖσθαι τῷ ἀέρι διὰ πλάτος. The flatness of the sun is also spoken of by Stobæus, i. 524; *Plac.* ii. 22, 1 (Ἀναξ. πλατὺν ὡς πέταλον τὸν ἥλιον). Of the stars, on the contrary, the same authorities (*Ecl.* i. 510; *Plac.* ii. 14) say that Anaximenes made them ἥλων δίκην καταπεπηγέναι τῷ κρυσταλλοειδεῖ; and in accordance with this, Galen (*Hist. Phil.* 12) says: Ἀναξ. τὴν περιφορὰν τὴν ἐξωτάτην γηΐνην εἶναι (*Plac.* ii. 11, 1). Our text has instead: τὴν περιφορὰν τὴν ἐξωτάτω τῆς γῆς εἶναι τὸν οὐρανόν; but the pseudo-Galen here seems to give the original reading. It is possible then that Anaximenes, as Teichmüller (*loc. cit.* 86 sqq.) supposes, made only the sun, moon and planets float in the air, and considered the fixed stars as fastened into the crystalline vault of heaven, in whatever way he may have explained the origin of this latter (Teichmüller thinks that like Empedocles, *Plac.* ii. 11, 1, he supposed it to be formed of air liquified by the action of fire). But in that case Hippolytus must have expressed himself very inaccurately.

[2] Hippol. *loc. cit.*: γεγονέναι δὲ τὰ ἄστρα ἐκ γῆς διὰ τὸ τὴν ἰκμάδα ἐκ ταύτης ἀνίστασθαι, ἧς ἀραιουμένης τὸ πῦρ γίνεσθαι, ἐκ δὲ τοῦ πυρὸς μετεωριζομένου τοὺς ἀστέρας συνίστασθαι. εἶναι δὲ καὶ γεώδεις φύσεις ἐν τῷ τόπῳ τῶν ἀστέρων συμφερομένας ἐκείνοις (or, according to Stob. i. 510: πυρίνην μὲν τὴν φύσιν τῶν ἀστέρων, περιέχειν δέ τινα καὶ γεώδη σώματα συμπεριφερόμενα τούτοις ἀόρατα). Plut. ap. Eus. *loc. cit.*: τὸν ἥλιον καὶ τὴν σελήνην καὶ τὰ λοιπὰ ἄστρα τὴν ἀρχὴν τῆς γενέσεως ἔχειν ἐκ γῆς. ἀποφαίνεται γοῦν τὸν ἥλιον γῆν, διὰ δὲ τὴν ὀξεῖαν κίνησιν καὶ μάλ' ἱκανῶς θερμοτάτην κίνησιν (perhaps θερμότητα should be read here without κίνησιν) λαβεῖν.' Theodoret asserts (*Gr. aff. cur.* iv. 23, p. 59) that Anaximenes held that the stars consisted of pure fire. This assertion, which was probably taken from the commencement of the notice preserved by Stobæus, must be judged of in the light of the foregoing texts.

eclipses.[1] The stars, he thought, moved, not from the zenith towards the nadir, but laterally round the earth, and the sun at night disappeared behind the northern mountains;[2] the circular form of their orbits he attributed to the resistance of the air.[1] In the stars no doubt we must look for the created gods of

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[1] Eudemus ap. Theo. (Dercyllides), *Astrom.* p. 324 Mart.

[2] Hippol. *loc. cit.*: οὐ κινεῖσθαι δὲ ὑπὸ γῆν τὰ ἄστρα λέγει καθὼς ἕτεροι ὑπειλήφασιν. ἀλλὰ περὶ γῆν, ὡσπερεὶ περὶ τὴν ἡμετέραν κεφαλὴν στρέφεται τὸ πιλίον, κρύπτεσθαί τε τὸν ἥλιον οὐχ ὑπὸ γῆν γενόμενον, ἀλλ' ὑπὸ τῶν τῆς γῆς ὑψηλοτέρων μερῶν σκεπόμενον, καὶ διὰ τὴν πλείονα ἡμῶν αὐτοῦ γενομένην ἀπόστασιν. Stob. i. 510: οὐχ ὑπὸ τὴν γῆν δὲ, ἀλλὰ περὶ αὐτὴν στρέφεσθαι τοὺς ἀστέρας. According to these testimonies (that of Hippolytus especially, seems to come from a trustworthy source), we should include Anaximenes among those of whom Aristotle says *in Meteor.* ii. 1, 354 a, 28: τὸ πολλοὺς πεισθῆναι τῶν ἀρχαίων μετεωρολόγων τὸν ἥλιον μὴ φέρεσθαι ὑπὸ γῆν, ἀλλὰ περὶ τὴν γῆν καὶ τὸν τόπον τοῦτον, ἀφανίζεσθαι δὲ καὶ ποιεῖν νύκτα διὰ τὸ ὑψηλὴν εἶναι πρὸς ἄρκτον τὴν γῆν. Anaximenes is the only philosopher, so far as we know, who had recourse to the mountains of the north, for the explanation of the sun's nightly disappearance, and there is besides so great a similarity between the words of Hippolytus concerning him, and those of Aristotle concerning the ancient meteorologists, that we may even conjecture with some probability that Aristotle is here thinking specially of Anaximenes. Teichmüller thinks (*loc. cit.* p. 96) that the words, ἀρχαῖοι μετεωρολόγοι, do not relate to physical theories, but like the ἀρχαῖοι καὶ διατρίβοντες περὶ τὰς θεολογίας, at the beginning of the chapter, to mythical ideas about the ocean, on which Helios fares back during the night from west to east. This interpretation cannot be based upon the context, for there is no connection between the two passages, which are besides widely separated from each other. The mode of expression also is decidedly against such a view. Aristotle always calls the representatives of mythical and half-mythical cosmologies theologians; by μετεωρολογία, on the other hand (μετεωρολόγος is never used by him except in this passage), he understands (*Meteor.* i. 1 sub init.) a specific branch of natural science (μέρος τῆς μεθόδου ταύτης), and in this, as he expressly remarks (*loc. cit.*), he agrees with the ordinary use of the words; meteorology, meteorosophy, and the like, being common expressions to designate natural philosophers. Cf. for example, Aristophanes, *Nub.* 228; Xen. *Symp.* 6, 6; Plato, *Apol.* 18 B, 23 D; *Prot.* 315 C. We know that Anaxagoras, Diogenes and Democritus also made the sun go laterally round the earth (*infra*, vol. ii.). Now it might seem that if Anaximenes conceived the segment of the circle which the sun describes between his rising and setting above the horizon, to be continued and completed into a whole circle, he must necessarily have supposed it to be carried beneath the earth. But even if this circle cut the plane of our horizon, it would not therefore be carried

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under the earth, that is, under the base of the cylinder on the upper side of which we live (cf. p. 273, 3); it would form a ring passing round this cylinder, obliquely indeed, but still laterally; it would go not ὑπὸ γῆν, but περὶ γῆν. As Anaximenes made this circle dip at a certain distance from the northern edge of the earth's habitable surface, which edge, according to his geographical ideas, would not be very far from the northern shore of the Black Sea, he might well believe that without some elevation of the earth at this, its northern verge, the sun would not entirely disappear from us, and that in spite of such elevation, some of its light would penetrate to us even at night, if it were not diminished (according to the opinion of Hippolytus) by the great distance. But I by no means exclude the possibility that, according to Anaximenes, the sun and stars (of the stars, indeed, he expressly says this) and by inference the planets (if he supposed the fixed stars to be fastened into the firmament, vide p. 274, 1) may have descended at their setting, either not at all, or very little below the surface of the horizon. As he imagined them to be flat like leaves (vide p. 274, 1) and, therefore, borne along by the air, he might easily suppose that when they reached the horizon, the resistance of the air would hinder their farther sinking (vide the following note). What has now been said will, I hope, serve to show the true value of Röth's strictures (*Gesch. der abendl. Phil.* 258) on those who cannot see that a lateral motion of the stars is absolutely impossible with Anaximenes. Teichmüller (*loc. cit.*) admits that he held a lateral rotation of the sun around the earth, a rotation in which the axis of its orbit stands obliquely to the horizon. Only he thinks that after its setting it does not move close round the earth, or upon the earth behind the high northern mountains (p. 103)—a notion which, so far as I know, no one has hitherto ascribed to Anaximenes. In the *Plac.* ii. 16, 4, and therefore, also in Pseudo-Galen, c. 12, we read, instead of the words quoted above from Stob. i. 510: Ἀναξιμένης, ὁμοίως ὑπὸ (Galen, manifestly erroneously, reads ἐπὶ) τὴν γῆν καὶ περὶ αὐτὴν στρέφεσθαι τοὺς ἀστέρας. Teichmüller concludes from this passage (p. 98) that the motion of the sun (of the heavenly bodies) is the same above and beneath the earth, that the circular movement of the firmament has the same radius above and below. But περὶ does not mean above, and whatever kind of motion it might in itself characterise, as contrasted with ὑπὸ (this we have already seen in the passages from Aristotle, Hippolytus and Stobæus), it can only be used for a circular lateral movement. In the *Placita*, it seems to me we have simply an unskilful correction, occasioned perhaps by some mutilation or corruption of the true text and authenticated by the other writers.

[1] Stobæus, i. 524, says: Ἀναξιμένης πύρινον ὑπάρχειν τὸν ἥλιον ἀπεφήνατο, ὑπὸ πεπυκνωμένου δὲ ἀέρος καὶ ἀντιτύπου ἐξωθούμενα τὰ

whom Anaximenes, as well as Anaximander, is said to have spoken;[1] but the same doubt arises in his case as in Anaximander's, viz., whether the infinitely many worlds ascribed to him[2] relate to the stars or to an infinite series of successive systems.[3] However this may be, we are justified by the testimonies of Stobæus[4] and

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ἄστρα τὰς τροπὰς ποιεῖσθαι. Similarly *Plac.* ii. 23, 1: Ἀ. ὑπὸ πεπυκνωμένου ἀέρος καὶ ἀντιτύπου ἐξωθεῖσθαι τὰ ἄστρα. In both authors this stands under the heading περὶ τροπῶν ἡλίου (in Stobæus, περὶ οὐσίας ἡλίου . . . καὶ τροπῶν, &c.), and they probably, therefore, meant what are usually called the two solstices, which Anaximenes might have explained in this manner consistently with his notion of the sun. It is noticeable, however, that they both speak of the displacement (Stobæus says also τροπαὶ) of the ἄστρα, to which τροπαὶ in this sense are not elsewhere attributed. It is, therefore, probable that the proposition ascribed by these writers to Anaximenes had originally another meaning, and signified that the stars were forced by the resistance of the wind from the direction of their course. The expression employed does not hinder this interpretation. Aristotle himself speaks (*De Cœlo*, ii. 14, 296 b, 4) of τροπαὶ τῶν ἄστρων; *Meteor.* ii. 1, 353 b, 8, of τροπαὶ ἡλίου καὶ σελήνης; and *ibid.* 355 a, 25, of τροπαὶ τοῦ οὐρανοῦ; and Anaxagoras, who is so often allied with Anaximenes in his astronomical theories, taught, according to Hippol. i. 8, line 37: τροπὰς δὲ ποιεῖσθαι καὶ ἥλιον καὶ σελήνην ἀπωθουμένους ὑπὸ τοῦ ἀέρος. σελήνην δὲ πολλάκις τρέπεσθαι διὰ τὸ μὴ δύνασθαι κρατεῖν τοῦ ψυχροῦ. Τροπὴ seems to designate every change in the orbit of the heavenly bodies, which altered the previous direction of their course. Thus the proposition of Anaximenes quoted above must have been intended to explain, not the sun's deviation at the solstices, but the circular orbit of the heavenly bodies—those, at least, which are not fixed in the firmament. At the same time, however, it may be that he wishes to explain why their orbits are continued without descending, or in descending very little, beneath the plane of our horizon, vide previous note. By τροπαὶ he would mean in that case the inflexion in the curves described by them.

[1] Hippol. vide *supra*, p. 267, 3; Aug. *Civ. D.* viii. 2: *omnes rerum causas infinito aëri dedit: nec deos negavit aut tacuit: non tamen ab ipsis aërem factum, sed ipsos ex aëre factos credidit*; and after him, Sidon. Apoll. xv. 87; cf. Krische, *Forsch.* 55 sq.

[2] Stob. *Ecl.* i. 496; Theod. *Gr. aff. cur.* iv. 15, p. 58.

[3] That he did not assume a plurality of co-existent systems, is expressly stated by Simplicius, vide p. 278, 1.

[4] *Loc. cit.* 416: Ἀναξίμανδρος, Ἀναξιμένης, Ἀναξαγόρας, Ἀρχέλαος, Διογένης, Λεύκιππος φθαρτὸν τὸν κόσμον, καὶ οἱ Στωϊκοὶ φθαρτὸν τὸν κόσμον, κατ᾽ ἐκπύρωσιν δέ. The destruction of the world *by fire* is

Simplicius,[1] which mutually support and complete one another, in attributing to him the doctrine of an alternate construction and destruction of the world.

The hypotheses concerning the origin of rain, snow, hail, lightning, the rainbow,[2] and earthquakes,[3] which are ascribed to Anaximenes, sometimes on good authority, are for us of secondary importance; and his theory of the nature of the soul,[4] based chiefly upon the ordinary popular opinion, he himself does not seem to have further developed.

This survey of the doctrines attributed to Anaximenes may now enable us to determine the question already raised: did Anaximenes owe nothing to Anaximander except in some minor points of his enquiry?[5] It seems to me that his philosophy taken as a whole clearly betrays the influence of his predecessor. For Anaximander had in all probability already expressly asserted not only the infinity, but the animate nature and perpetual motion of primitive matter. Anaximenes reiterates these theories, and, by virtue of them, seems to reach his conclusion that air is the primitive matter. It is true that he returns from the

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here ascribed, not to Anaximander, &c., but only to the Stoics; though it is not improbable that Anaximander also held it. Vide *supra*, p. 260.

[1] *Phys.* 257 b, : *ὅσοι ἀεὶ μέν φασιν εἶναι κόσμον, οὐ μὴν τὸν αὐτὸν ἀεὶ, ἀλλὰ ἄλλοτε ἄλλον γινόμενον κατά τινας χρόνων περιόδους, ὡς Ἀναξιμένης τε καὶ Ἡράκλειτος καὶ Διογένης.*

[2] Hippol. *loc. cit.*; *Placita*, iii. 4, 1, 5, 10; Stob. i. 590; Joh. Damasc. *Parall.* s. i. 3, 1 (Stob. *Floril. Ed. Mein.* iv. 151). Theo in *Arat.* v. 940.

[3] Arist. *Meteor.* ii. 7, 365 a, 17 b, 6; *Plac.* iii. 15, 3; *Sen.* *Qu. Nat.* vi. 10; cf. Ideler, Arist. *Meteorol.* i. 585 sq. Perhaps in this also Anaximenes follows Anaximander, vide *supra*, p. 256, 3.

[4] In the fragment discussed p. 268, 3, and p. 270, from which doubtless the short statement in Stob. *Ecl.* i. 796. and Theodoret, *Gr. aff. cur.* v. 18, is taken.

[5] Ritter, i. 214.

indeterminate conception of infinite substance to a determinate substance, and that he represents things as arising out of this not by separation, but by rarefaction and condensation. But at the same time he is evidently concerned to maintain what Anaxagoras had held about the primitive substance; and thus his principle may be described as the combination of the two previous principles. With Thales, he accepts the qualitative determinateness of primitive matter; with Anaximander he expressly asserts its infinity and animation. For the rest he inclines chiefly to Anaximander. Even if we cannot with justice ascribe to him the doctrine of the destruction of the world, and of innumerable worlds in succession, we can still see his dependence on his predecessor[1] in his ideas concerning the primitive opposition of heat and cold, the form of the earth and stars, on atmospheric phenomena, in what he says of the stars as the created gods, perhaps also in the opinion that the soul is like air in its nature. Yet this dependence is not so great, nor his own original achievement so insignificant that we should be justified in refusing to recognise any kind of philosophic progress in his doctrine.[2] For Anaximander's notion of infinite matter is too indeterminate to explain particular substances, and the 'separation' by which he accounts for all production of the derived from the original, is open to the same charge. The determinate substances, according to him, are not as such contained in the primitive substance: separation is therefore only another expression for the Becoming of the particular. Anaximenes attempted to gain a more definite idea of the physical process, by which things are evolved from primitive matter; and to that end, he sought the primitive matter itself in a determinate body, qualified to be the substratum of that process. Such an attempt was certainly of great importance; and, considering the state of enquiry at that period, marked real progress. On this account, the latter Ionian physicists especially followed Anaximenes; to such an extent indeed, that Aristotle attributes the doctrine of rarefaction and condensation to all those who take a determinate substance for their principle;[1] and a century after Anaximenes, Diogenes of Apollonia and Archelaus again set up his theory of primitive matter.

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[1] Strümpell, therefore, in placing Anaximenes before Anaximander, is as little in accordance with the internal relation of their doctrines, as with the chronology.

[2] Haym. *Allg. Enc. Sect.* iii. vol. xxiv. 27.

IV. *THE LATER ADHERENTS OF THE IONIC SCHOOL.*

DIOGENES OF APOLLONIA.

After Anaximenes, there is a *lacuna* in our knowledge of the Ionic school. If we consulted only the chronology, this *lacuna* would be filled by Heracleitus; but the peculiar nature of his philosophy separates him from the earlier Ionians. Meanwhile the theories of the Milesian physicists must have been propagated during this period, and even have given occasion to farther definitions. This is clear from the subsequent appearance of similar doctrines, about which, however, our information is for the most part very scanty. The philosophers whom we have to mention in this connection are chiefly allied with Anaximenes; they make either the air itself, or a body of the nature of air, their primitive matter. But the doctrine of Thales likewise found adherents; for example, Hippo,[1] a physicist of the time of Pericles,[2] whose country is uncertain,[3] and his personal history unknown.[4] Like Thales, he declared water to be the first principle of all things,[1] or as Alexander,[2] probably with more accuracy,[3] says, moisture (τὸ ὑγρὸν), without any more precise determination. He was led to this chiefly as it seems by considering the moist nature of animal seed;[4] it was at any rate for this reason that he held the soul to be a liquid analogous to the seed from which, in his opinion, it sprang.[5] He probably therefore concluded, like Anaximenes, that that which is the cause of life and motion must be also the primitive matter. He made fire originate from water; and the world from the overcoming of water by fire;[6] on which account his principles are sometimes

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[1] Vide *supra*, p. 243, 1.

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[1] Cf. Schleiermacher, *Werke, Abtheilung*, iii. 405–410; Bergk, *Reliquiæ Comœd. Att.* 164, 185; Backhuizen Van den Brink, *Variæ lectiones ex historia philosophiæ antiquæ* (Leyden, 1842), 36–59.

[2] This is clear from the statement of the Scholiast of Aristophanes, *Nub.* 96, exhumed by Bergk, that Cratinus in the Panoptai ridiculed him (*infra*, p. 283, 3). His theories also point to a later date. The detailed enquiries concerning the formation and development of the fœtus seem to contain some allusions to Empedocles (vide Backhuizen Van den Brink, 48 sq.). He seems also to be thinking of Empedocles when he combats the hypothesis that the soul is blood (this, however, is less certain; for that idea is an ancient popular opinion). These enquiries, at any rate, serve to show the tendency of the later physicists to the observation and explanation of organic life. The more abstract conception of Thales' principle, which Alexander ascribes to him, is likewise in accordance with this. That he had already been opposed by Alcmæon (Cens. *Di. Nat.* c. 5) is a mistake (Schleiermacher, 409).

[3] Aristoxemus ap. Cens. *Di. Nat.* c. 5, and Iamblichus, *V. Pyth.* 267, describe him as a Samian, and this is, of course, the most probable; others, perhaps confusing him with Hippasus, say that he came from Rhegium (Sext. *Pyrrh.* iii. 30; *Math.* ix. 361; Hippolyt. *Refut. Hær.* i. 16), or Metapontum (Cens. *loc. cit.*). The same blunder may have occasioned his being placed by Iamblichus (*loc. cit.*) among the Pythagoreans; though the author of that catalogue scarcely needed this excuse. Perhaps Aristoxenus had remarked that he studied the doctrines of Pythagoras; and Iamblichus, or his authority, therefore made him out a Pythagorean. The statement that he came from Melos (Clemens, *Cohort.* 15 A; Arnob. *Adv. Nat.* iv. 29) can be more distinctly traced to a confusion with Diagoras (who, in the above-quoted passages, is coupled with him as an atheist), if not to a mere slip of the pen, in the text of Clemens.

[4] From the attacks of Cratinus nothing more can be gathered than that he must have resided for some time in Athens; Bergk (p. 180) farther concludes from the verse in Athen. xiii. 610 b, that he wrote in verse, but it does not follow that he may not also have written in prose. The conjecture (Backhuizen Van den Brink, p. 55) that Hippo was the

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author of the writing περὶ ἀρχῶν, falsely ascribed to Thales, and quoted *supra*, p. 216, 2, and p. 226, 1, is to me very improbable, because of the expressions, ἀρχαὶ and στοιχεῖον, which it contains.

[1] Arist. *Metaph.* i. 3, 984 a, 3; Simpl. *Phys.* 6 a, 32 a; *De Cœlo*, 268 a, 44; *Schol. in Arist.* 513 a, 35; Philop. *De An.* A, 4; C, 7.

[2] *Ad Metaphys.* p. 21, Bon.

[3] Aristotle classes him generally with Thales, without definitely saying that he made water his first principle; this was first said by later writers. But from Aristotle's procedure elsewhere, we can see that he would have had no scruple in identifying the ὑγρὸν with the more determinate ὕδωρ.

[4] Vide the following note. Simplicius, *De Cœlo*, 273 b, 36; *Schol. in Arist.* 514 a, 26; and Philoponus, *De An.* A, 4, say more distinctly that Thales and Hippo held water to be the primitive matter, on account of the moisture of the seed and of nourishment in general. It has been already observed, however (p. 218), that in so doing they merely turned Aristotle's conjecture (*Metaph.* i. 3) into a formal statement.

[5] Arist. *De An.* i. 2, 405 b: τῶν δὲ φορτικωτέρων καὶ ὕδωρ τινὲς ἀπεφήναντο [τὴν ψυχὴν] καθάπερ Ἵππων. πεισθῆναι δ' ἐοίκασιν ἐκ τῆς γονῆς, ὅτι πάντων ὑγρά. καὶ γὰρ ἐλέγχει τοὺς αἷμα φάσκοντας τὴν ψυχὴν, ὅτι ἡ γονὴ οὐχ αἷμα (he sought to prove, according to Cens. *loc. cit.*, by study of animals, that the seed comes from the marrow) ταύτην δ' εἶναι τὴν πρώτην ψυχήν. Herm. *Irris*, c. 1 (cf. Justin, *Cohort.* c. 7): Hippo considers the soul to be a ὕδωρ γονοποιόν. Hippolyt. *loc. cit.*: τὴν δὲ ψυχὴν ποτὲ μὲν ἐγκέφαλον ἔχειν (read λέγει, or with Duncker: ἔφη εἶναι) ποτὲ δὲ ὕδωρ, καὶ γὰρ τὸ σπέρμα εἶναι τὸ φαινόμενον ἡμῖν ἐξ ὑγροῦ, ἐξ οὗ φησι ψυχὴν γίνεσθαι. Stob. i. 798; Tertull. *De An.* c. 5; Philop. *De An.* A, 4 C, 7.

[6] Hippol: *l. c.*: Ἵππων δὲ ὁ Ῥηγῖνος ἀρχὰς ἔφη ψυχρὸν τὸ ὕδωρ καὶ θερμὸν τὸ πῦρ. γεννώμενον δὲ τὸ

asserted to be fire and water.[1] What his more exact opinions were as to the constitution of the universe—whether the erroneous statement that he held the earth to have been the first,[2] had any real foundation in fact—whether in harmony with Anaximander and Anaximenes, he may perhaps have taught that out of fluid, under the influence of fire, the earth was first formed, and out of the earth, the stars—we have no means of determining.[3] As little do we know on what ground Hippo was charged with atheism,[4] as he has been in several quarters. The unfavourable judgment of Aristotle as to his philosophic capacity,[5] however, greatly reconciles us to the meagreness of the traditions respecting his doctrine. He was no doubt less of a philosopher than an empirical naturalist, but even as such, from what we hear of him,[6] he does not seem to have attained any great importance.

πῦρ ὑπὸ ὕδατος κατανικῆσαι τὴν τοῦ γεννήσαντος δύναμιν, συστῆσαί τε τὸν κόσμον.

[1] Vide previous note and Sextus. *loc. cit.*; Galen, *H. Phil.* c. 5, p. 243.

[2] Johannes Diac. *Alleg. in Hes. Theog.* v. 116, p. 456.

[3] This holds good of the statement alluded to (p. 281, 2) that Cratinus made the same charge against Hippo that Aristophanes did against Socrates, viz. that he taught that the heavens were a *πνιγεὺς* (an oven or hollow cover warmed by coals), and that men were the coals in it. He may have supposed the sky to be a dome resting upon the earth; but how this could be brought into connection with his other notions, we do not know.

[4] Plut. *Comm. Not.* c. 31, 4; Alexander, *loc. cit.* and other commentators; Simpl. *Phys.* 6 a; *De An.* 8 a; Philop. *De An.* A, 4; Clemen. *Cohort.* 15 A, 36 C; Arnob. iv. 29; Athen. xiii. 610 b; Ælian, *V. H.* ii. 31; Eustach. *in Il.* Φ 79; Odyss. Γ 381. What Alexander and Clemens say about his epitaph as the occasion of this imputation explains nothing. Pseudo-Alex. *in Metaph.* vii. 2; xii. 1, p. 428, 21, 643, 24, Bon., asserts that his materialism was the cause; but this is evidently a conjecture.

[5] In the passages cited p. 282, 1, 5.

[6] Besides what has been already quoted we should here mention his theories on birth and the formation of the fœtus, Censor. *Di.*

As Hippo was influenced by Thales, so Idaeus of Himera appears to have been influenced by Anaximenes.[1] Anaximenes most likely also originated the two theories mentioned in some passages by Aristotle;[2] according to the one, primitive matter in respect of density stands midway between water and air; according to the other, between air and fire. That both theories belong to a younger generation of Ionian physicists is probable, for they occupy an intermediate position between older philosophers; the one between Thales and Anaximenes, the other between Anaximenes and Heracleitus. We must, however, primarily refer them to Anaximenes, since he was the first who raised the question of the relative density of the different kinds of matter, and who explained the formation of particular substances by the processes of condensation and rarefaction. In this way he arrived at the opposition of rarefied and condensed air, or warm air and cold air; if warm air were adopted as the primitive element, the result was an intermediary between air and fire; if cold air, an intermediary between air and water.[3]

Nat. c. 5–7, 9; Plut. *Plac*. v. 5, 3, 7, 3, into which I cannot now enter more particularly, and a remark about the difference between wild and cultivated plants in Theophrast. *Hist. Plant*. i. 3, 5; iii. 2, 2. Athen. xiii. 610 b, contains a verse of his against πουλυμαθημοσύνη, which resembles the famous saying of Heracleitus; he quotes the same verse, however, as coming from Timon, who might have borrowed it from Hippo.

[1] Sext. *Math*. ix. 360: Ἀναξιμένης δὲ καὶ Ἰδαῖος ὁ Ἱμεραῖος καὶ Διογένης . . . . ἀέρα [ἀρχὴν ἔλεξαν]. Besides this we know nothing of Idæus.

[2] Vide p. 241, 1, 2. These passages do not relate to Diogenes, as will presently be shown.

[3] In connection with Anaximenes we should mention Melesagoras; according to Brandis, i. 148, Clemens (*Strom*. vi. 629, A) names him as the author of a book transcribed from Anaximenes; and as holding similar doctrines to those of Anaximenes. Clemens also says: τὰ δὲ Ἡσιόδου μετήλλαξαν

Diogenes of Apollonia[1] is a philosopher with whom we are better acquainted; and his doctrine shows in a striking manner that the Ionic school maintained its early presuppositions, even when other and more de-

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εἰς πεζὸν λόγον καὶ ὡς ἴδια ἐξήνεγκαν Εὔμηλός τε καὶ Ἀκουσίλαος οἱ ἱστοριογράφοι. Μελησαγόρου γὰρ ἔκλεψεν Γοργίας ὁ Λεοντῖνος · καὶ Εὔδημος ὁ Νάξιος οἱ ἱστορικοὶ, καὶ ἐπὶ τούτοις ὁ Προκοννήσιος Βίων . . . . Ἀμφίλοχός τε καὶ Ἀριστοκλῆς καὶ Λεάνδριος καὶ Ἀναξιμένης, καὶ Ἑλλάνικος, and so on. But this Melesagoras, who was made use of by various historians, can scarcely have been any other than the well-known Logographer, who was also called Amelesagoras (see Müller, *Hist. of Gr.* ii. 21), and the Anaximenes, whom Clemens names among a number of historians, is certainly not our philosopher, but likewise a historian, probably Anaximenes of Lampsacus, mentioned by Diogenes, the nephew of the orator. It is a question, moreover, whether we ought not to read Εὐμήλου instead of Μελησαγόρου, or Μελησαγόρας instead of Εὔμηλος; and whether the words Ἀμφίλοχος, &c., are to be connected with ἔκλεψεν, and not with τὰ 'Ηησιόδου μετήλλαξαν, &c.

[1] The statements of the ancients respecting him, and the fragments of his work, have been carefully collected and annotated by Schleiermacher (*Ueber Diogenes v. Apollonia*, third section of his collected works, ii. 149 sqq.) and by Panzerbieter (*Diogenes Apolloniates*, 1830). Cf. also Steinhart, *Allg. Encycl.* of Ersch and Gruber, Sect. I. vol. xxv. 296 sqq.; Mullach, *Fragm. Philos. Gr.* i. 252 sqq. Of his life we know very little. He was a native of Apollonia (Diog. ix. 57, &c.), by which Stephen of Byzantium (*De Urb. s. v.* p. 106, Mein.) understands Apollonia in Crete, but as he wrote in the Ionic dialect, it is doubtful if this can be the city. His date will hereafter be discussed. According to Demetrius Phalerius ap. Diog. *loc. cit.*, he was in danger through unpopularity at Athens, by which is probably meant that he was threatened with similar charges to those brought forward against Anaxagoras. But there may be some confusion here with Diagoras. The assertion of Antisthenes, the historian (ap. Diog. *l. c.*), repeated by Augustine, *Civ. Dei*, viii. 2, that he attended the instructions of Anaximenes is merely based on conjecture, and is as worthless in point of evidence as the statement of Diogenes (ii. 6) that Anaxagoras was a hearer of Anaximenes; whereas, in all probability, he was dead before Anaximenes was born, cf. Krische, *Forsch.* 167 sq. Diogenes's work, περὶ φύσεως, was used by Simplicius, but (as Krische observes, p. 166) he does not seem to have been acquainted with the second book of it, which Galen quotes *in Hippocr.* vi. *Epidem.* vol. xvii. 1 a, 1006 K. That Diogenes composed two other works is doubtless an error of this writer, founded on a misapprehension of some of his utterances (*Phys.* 32 b), vide Schleiermacher, p. 108 sq.; Panzerbieter, p. 21 sqq.

veloped ideas had been introduced into it. On one side he is closely connected with Anaximenes, on another he in all probability transcends him: not only is his exposition more methodical in form and more careful as to details, but he is also distinguished from his predecessor in having ascribed to the air, as primitive cause and primitive matter, certain spiritual qualities, and having tried to explain the life of the soul by the air so apprehended. To gain a fixed basis for his enquiry,[1] he determined the general characteristics which must belong to the primitive essence. On the one hand he said it must be the common matter of all things, and on the other, an essence capable of thought. His argument for the first assertion was the following. We know that things change one into another, that substances mix, and that things influence and affect each other. None of these phenomena would be possible if the various bodies were distinct as to their essence. They must therefore be one and the same, must have sprung from the same substance, and must be resolved into the same again.[2] In proof of the second assertion,

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[1] According to Diogenes, vi. 81; ix. 57, his work began with the words: *λόγου παντὸς ἀρχόμενον δοκέει μοι χρεὼν εἶναι τὴν ἀρχὴν ἀναμφισβήτητον παρέχεσθαι, τὴν δὲ ἑρμηνηΐην ἁπλῆν καὶ σεμνήν.*

[2] Fr. 2 ap. Simpl. *Phys.* 32 b: *ἐμοὶ δὲ δοκέει, τὸ μὲν ξύμπαν εἰπεῖν, πάντα τὰ ἐόντα ἀπὸ τοῦ αὐτοῦ ἑτεροιοῦσθαι καὶ τὸ αὐτὸ εἶναι. καὶ τοῦτο εὔδηλον. εἰ γὰρ ἐν τῷδε τῷ κόσμῳ ἐόντα νῦν γῆ καὶ ὕδωρ καὶ τἄλλα, ὅσα φαίνεται ἐν τῷδε τῷ κόσμῳ ἐόντα, εἰ τουτέων τι ἦν τὸ ἕτερον τοῦ ἑτέρου ἕτερον ἐὸν τῇ ἰδίῃ φύσει καὶ οὐ τὸ αὐτὸ ἐὸν μετέπιπτέ πολλαχῶς καὶ ἠτεροιοῦτο, οὐδαμῇ οὔτε μίσγεσθαι ἀλλήλοις ἠδύνατο, οὔτε ὠφέλησις τῷ ἑτέρῳ οὔτε βλάβη . . . οὐδ' ἂν οὔτε φυτὸν ἐκ τῆς γῆς φῦναι, οὔτε ζῷον οὔτε ἄλλο γενέσθαι οὐδὲν, εἰ μὴ οὕτω συνίστατο, ὥστε ταὐτὸ εἶναι. ἀλλὰ πάντα ταῦτα ἐκ τοῦ αὐτοῦ ἑτεροιούμενα ἄλλοτε ἀλλοῖα γίγνεται καὶ ἐς τὸ αὐτὸ ἀναχωρέει.* Fr. 6, ap. Simpl. 33 a: *οὐδὲν δ' οἷόν τε γενέσθαι τῶν ἑτεροιουμένων ἕτερον ἑτέρου πρὶν ἂν τὸ αὐτὸ γένηται,* and Arist. *Gen. et Corr.* i. 6, 322, b, 12. What Dio-

Diogenes appealed in a general manner to the wise and felicitous distribution of matter in the world;[1] and more particularly, to this testimony of our experience—that life and thought are produced in all living natures by the air which they breathe, and are bound up with this substance.[2] He therefore concluded that the substance of which all things consist must be a body eternal, unchangeable, great and powerful, and rich in knowledge.[3] All these qualities he thought he discovered in the air; for the air penetrates all things, and in men and animals produces life and consciousness; the seed of animals, also, is of a nature like air.[4] He, therefore, with Anaximenes, declared air to be the matter and ground of all things.[5] This is attested almost unanimously[6] by ancient writers; and Diogenes himself says[7] that air is the essence in which reason

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genes ix. 57, says he taught—viz. that nothing comes from nothing or to nothing—is here indeed presupposed, but whether he expressly enunciated this principle we do not know.

[1] Fr. 4, Simpl. *loc. cit.*; οὐ γὰρ ἂν οὕτω δεδάσθαι [sc. τὴν ἀρχὴν] οἷόν τε ἦν ἄνευ νοήσιος, ὥστε πάντων μέτρα ἔχειν, χειμῶνός τε καὶ θέρεος καὶ νυκτὸς καὶ ἡμέρης καὶ ὑετῶν καὶ ἀνέμων καὶ εὐδιῶν καὶ τὰ ἄλλα εἴ τις βούλεται ἐννοέεσθαι, εὑρίσκοι ἂν οὕτω διακείμενα ὡς ἀνυστὸν κάλλιστα.

[2] Fr. 5, *ibid*: ἔτι δὲ πρὸς τούτοις καὶ τάδε μεγάλα σημεῖα· ἄνθρωπος γὰρ καὶ τὰ ἄλλα ζῷα ἀναπνέοντα ζώει τῷ ἀέρι, καὶ τοῦτο αὐτοῖς καὶ ψυχή ἐστι καὶ νόησις . . . καὶ ἐὰν ἀπαλλαχθῇ ἀποθνήσκει καὶ ἡ νόησις ἐπιλείπει.

[3] Fr. 3 from Simpl. *Phys.* 33 a.

[4] Vide notes 1, 2, and 7.

[5] Or as Theophrastus *De Sensu* 8, 42. Cicero, *N. D.* i. 12, 29, says the Deity; cf. Arist. *Phys.* iii. 4 (*supra*, p. 248, 1). Sidon. Apoll. xv. 91, discriminates the air of Diogenes as the matter endowed with creative energy, from God, but this is of course unimportant.

[6] The passages in question are given in extenso by Panzerbieter, p. 53 sqq. In this place it is sufficient to refer to Arist. *Metaph.* i. 3, 984 a, 5; *De An.* 405 a, 21; Theophrast. ap. Simpl. *Phys.* 6 a.

[7] Fr. 6, ap. Simpl. 33 a: καί μοι δοκέει τὸ τὴν νόησιν ἔχον εἶναι ὁ ἀὴρ καλεόμενος ὑπὸ τῶν ἀνθρώπων, καὶ ὑπὸ τούτου πάντα καὶ κυβερνᾶσθαι καὶ πάντων κρατέειν. ἀπὸ γάρ μοι τούτου δοκέει ἔθος εἶναι (instead of ἀπὸ Panzerbieter here reads αὐτοῦ;

dwells, and which guides and governs all things, because its nature is to spread itself everywhere, to order all and to be in all. Nicolaus of Damascus, Porphyry,[1] and in one passage,[2] likewise Simplicius, attribute to Diogenes as his first principle the substance intermediate between air and fire,[3] so often mentioned by Aristotle. This is unquestionably an error, into which they were probably misled by Diogenes' opinion, that the soul, by analogy with which he defines his primitive essence,[4] was of the nature of warm air. Nor can I agree with Ritter's similar theory,[5] that the primitive essence of Diogenes was not the ordinary atmospheric air, but a more subtile kind, ignited by heat; for not only do all the accounts, and Diogenes' own explanations, speak of the air as 'that which is usually called air;' but according to his own principles it would have been impossible for him, while deriving all things from air by rarefaction and condensation, to seek the original principle (that which constituted the basis of all the different forms and changes of the atmosphere), not in the

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this I prefer to Mullach's amendment, which retains *ἀπὸ*, but substitutes *νόος* for *ἔθος*) *καὶ ἐπὶ πᾶν ἀφῖχθαι καὶ πάντα διατιθέναι καὶ ἐν παντὶ ἐνεῖναι καὶ ἔστι μηδὲ ἓν ὅ τι μὴ μετέχει τούτου . . . . καὶ πάντων τῶν ζῴων δὲ ἡ ψυχὴ τὸ αὐτό ἐστιν, ἀὴρ θερμότερος μὲν τοῦ ἔξω ἐν ᾧ ἐσμὲν, τοῦ μέντοι παρὰ τῷ ἡελίῳ πολλὸν ψυχρότερος.* This soul is besides very different in different beings: *ὅμως δὲ τὰ πάντα τῷ αὐτῷ καὶ ζῇ καὶ ὁρᾷ καὶ ἀκούει καὶ τὴν ἄλλην νόησιν ἔχει ὑπὸ τοῦ αὐτοῦ πάντα καὶ ἐφεξῆς δείκνυσιν*, adds Simplicius: *ὅτι καὶ τὸ σπέρμα τῶν ζῴων πνευματῶδές ἐστι καὶ νοήσεις γίνονται τοῦ ἀέρος σὺν τῷ αἵματι τὸ ὅλον σῶμα καταλαμβάνοντος διὰ τῶν φλεβῶν.*

[1] According to Simpl. *Phys.* 33 b; 6 b.

[2] *Phys.* 44 a.

[3] Vide *supra*, p. 241, 1.

[4] Cf. the passage cited, p. 287, 2, 7, and the general canon of Aristotle, *De An.* i. 2, 405 a, 3, to which Panzerbieter (p. 59) refers in support of his hypothesis. Vide also p. 268, 2.

[5] *Gesch. der Phil.* i. 228 sqq.

common aerial element, but in some particular kind of air.[1] Schleiermacher's conjecture also[2] is improbable, that Diogenes himself held air to be the primitive matter, but that Aristotle was doubtful as to his meaning, and so ascribed to him sometimes the air in general, sometimes warm or cold air. Such hesitation on the part of Aristotle respecting the principles of his predecessors is without precedent; from his whole spirit and method it is far more likely that he may have sometimes reduced the indefinite notions of earlier philosophers to definite concepts, than that he should have expressed himself in a vacillating and uncertain manner in regard to their definite theories. Aristotle repeatedly and decidedly declares that the principle of Diogenes was air; he then speaks of some philosophers, without naming them, whose principle was intermediate between air and water. Now it is impossible that these statements can relate to the same persons; we cannot doubt, therefore, that it is air in the common acceptation of the word, which our philosopher maintains to be the essence of all things.

We find from the above quotations that Diogenes, in his more precise description of the air, ascribed to it two properties which correspond to the requirements claimed by him in general for the primal matter. As the substance of all things, it must be eternal and imperishable, it must be contained in all things, and permeate all things; as the cause of life and order in the world, it must be a thinking and reasonable essence. In the air these two aspects are united; for, according to Diogenes' view, *because* the air permeates all things, it is that which guides and orders them; *because* it is the basal matter of all, all is known to it; *because* it is the rarest and subtlest matter, it is the most movable, and the cause of all motion.[1] We are expressly told[2] that he spoke of the air as the Infinite, and the statement is the more credible, since Anaximenes, whom Diogenes in other respects follows most closely, employed a similar definition. Moreover Diogenes describes the air in the same way that Anaximander describes his *ἄπειρον*; and Aristotle says that the infinity of primitive matter was held by most of the physiologists.[3] But this definition seems to have been regarded by him as of minor importance compared with the life and force of the primitive essence; that is his main point, and in it he discovers the chief proof of its air-like nature.

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[1] Though he may have generally described the air in comparison with other bodies as the λεπτομερέστατον or λεπτότατον (Arist. *De An. loc. cit.*), it does not follow that he held the rarest or warmest air alone to be the primitive matter; on the contrary, he says in Fr. 6 (vide *infra*, p. 291, 1), after having declared the air generally to be the first principle, that there are different kinds of air—warmer, colder, and so forth. Further particulars on this point will be given later on.

[2] In his treatise on Anaximander, Werke, 3te Abth. iii. 184. Cf. on the contrary, Panzerbieter, 56 sqq.

On account of this vitality and constant motion, the air assumes the most various forms. Its motion consists, according to Diogenes (who here again follows

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[1] Vide p. 287, 7, and Arist. *De An.* i. 2, 405 a, 21: *Διογένης δ', ὥσπερ ἕτεροί τινες, ἀέρα* (scil. *ὑπέλαβε τὴν ψυχὴν*), *τοῦτον οἰηθεὶς πάντων λεπτομερέστατον εἶναι καὶ ἀρχήν· καὶ διὰ τοῦτο γινώσκειν τε καὶ κινεῖν τὴν ψυχήν, ᾗ μὲν πρῶτόν ἐστι καὶ ἐκ τούτου τὰ λοιπὰ, γινώσκειν, ᾗ δὲ λεπτότατον, κινητικὸν εἶναι.*

[2] Simpl. *Phys.* 6 a. Probably after Theophrastus: *τὴν δὲ τοῦ παντὸς φύσιν ἀέρα καὶ οὗτός φησιν ἄπειρον εἶναι καὶ ἀΐδιον.*

[3] Vide p. 269, 1.

Anaximenes), in qualitative changes, in rarefaction and condensation;[1] or, which is the same thing, in heating and cooling; and so there arise in the air endless modifications in respect of heat and cold, dryness and dampness, greater or less mobility,[2] &c., corresponding to the different stages of its rarefaction or condensation. For the rest, Diogenes does not seem to have enumerated these differences systematically, after the manner of the Pythagorean categories, though he must have derived the different qualities of things, some from rarefaction, some from condensation, and must so far have coordinated them on the side of heat or cold.[3] Nor do we find any trace of the four elements; we do not know whether he assumed definite connecting media between particular substances and the primitive substance, or identified the endless multiplicity of particular substances with the innumerable stages of rarefaction and condensation, so that the air would become at one stage of condensation water, at another flesh, at a third stone. The most probable supposition, however, and the one which seems to result from the above statements of his about the different kinds of air, and also from his opinion on the development of the fœtus (vide *infra*)—is that he employed neither of the two modes of explication exclusively, and, generally speaking, in the derivation of phenomena, followed no fixed and uniform method.

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[1] Plut. ap. Eus. *Pr. Ev.* i. 8, 13: κοσμοποιεῖ δὲ οὕτως· ὅτι τοῦ παντὸς κινουμένου καὶ ᾗ μὲν ἀραιοῦ ᾗ δὲ πυκνοῦ γενομένου ὅπου συνεκύρησε τὸ πυκνὸν συστροφὴν ποιῆσαι, καὶ οὕτω τὰ λοιπὰ κατὰ τὸν αὐτὸν λόγον τὰ κουφότατα τὴν ἄνω τάξιν λαβόντα τὸν ἥλιον ἀποτελέσαι. Simpl. *loc. cit.* after the words just quoted: ἐξ οὗ πυκνουμένου καὶ μανουμένου καὶ μεταβάλλοντος τοῖς πάθεσι τὴν τῶν ἄλλων γίνεσθαι μορφὴν, καὶ ταῦτα μὲν Θεόφραστος ἱστορεῖ περὶ τοῦ Διογένους. Diog. ix. 57, cf. what is cited from Aristotle, p. 243, 1, and Arist. *Gen. et Corr.* ii. 9, 336 a, 3 sqq.

[2] *Fr.* 6, *supra*, p. 287, 7 (after the words ὅ τι μὴ μετέχει τούτου): μετέχει δὲ οὐδὲ ἓν ὁμοίως τὸ ἕτερον τῷ ἑτέρῳ, ἀλλὰ πολλοὶ τρόποι καὶ αὐτοῦ τοῦ ἀέρος καὶ τῆς νοήσιος εἰσίν. ἔστι γὰρ πολύτροπος, καὶ θερμότερος καὶ ψυχρότερος καὶ ξηρότερος καὶ ὑγρότερος καὶ στασιμώτερος καὶ ὀξυτέρην κίνησιν ἔχων, καὶ ἄλλαι πολλαὶ ἑτεροιώσιες ἔνεισι καὶ ἡδονῆς καὶ χροιῆς ἄπειροι. Panzerbieter explains ἡδονὴ (p. 63 sq.) by taste, as the word also stands in Anaxagoras Fr. 3; Xenophon, *Anab.* ii. 3, 16. Still better would be the analogous meaning 'smell,' which the word has in a fragment of Heracleitus. ap. Hippol. *Refut. Hær.* ix. 10; and in Theophrastus, *De Sensu*, 16, 90. Schleiermacher, *loc. cit.* 154, translates it feeling (*Gefühl*); similarly Schaubach (*Anaxagor. Fragm.* p. 86) *Affectio*; Ritter, *Gesch. der Ion. Phil.* 50, behaviour (*Verhalten*); *Gesch. der Phil.* i. 228, inner disposition (*innerer Muth*); Brandis, i. 281, internal constitution (*innere Beschaffenheit*); Philippson, Ὕλη ἀνθρωπίνη, p. 205, *bona conditio interna.*

[3] As Panzerbieter sets forth in detail, p. 102 sqq.

The first result of condensation and rarefaction was to separate from the infinite primitive substance, the heavy matter which moved downwards, and the light matter which moved upwards. From the former the earth was produced; from the latter, the sun, and no doubt the stars also.[1] This motion upwards and downwards Diogenes was forced to derive in the first place from heaviness and lightness, and secondly, from the inherent animation of matter as such. For the moving intelligence with him absolutely coincides with matter; the different kinds of air are also different kinds of thought (Fr. 6); that thought was added to material substances, and set them in motion,[2] is a view which would have been impossible to him. But after the first division of substances has been accomplished, all motion proceeds from the warm and the light.[3] Diogenes explained the soul of animals to be warm air; and so in the system of the world he regarded warm matter as the principle of motion, the efficient cause; and cold dense matter,[1] as the principle of corporeal consistency. In consequence of heat,[2] the universe he thought had acquired a circular motion from which also the earth took its round shape.[3] By this circular motion, however, he seems to have intended merely a lateral motion; and by the roundness of the earth a cylindrical, and not a spherical shape; for he assumed with Anaxagoras that the inclination of the earth's axis towards its surface arose subsequently from some unknown cause (*ἐκ τοῦ αὐτομάτου*), and that the axis at first ran perpendicularly down through the earth.[4] He was the more disposed to adopt Anaxagoras's notion as to the shape of the earth, and the original motion of the heavens, since Anaximenes had led him to the same result. Like Anaximander, he conceived of the earth in its primeval state as a soft and fluid mass gradually dried by the sun's heat. This is also proved by its having received its form in course of the rotation. What remained of the primitive liquid became the seas, the salt taste of which he derived from the evaporation of the sweet portions: the vapours developed from the drying up of the moisture served to enlarge the heavens.[1] The earth is full of passages through which

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[1] Plutarch, vide *supra*, p. 290, 4.

[2] As Panzerbieter represents, 111 sq.

[3] Fr. 6, *supra*, p. 287, 7.

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[1] From the union of these by means of *νόησις* arose (according to Steinhart, p. 299) sensible air. I know not, however, on what evidence this assumption is based; it seems to me inadmissible for the reasons I brought forward against Ritter on p. 288. Nor do I see any proof of the accuracy of the further observation that 'the sensible air is supposed to consist of an infinite number of simple bodies;' for Diogenes is never mentioned by Aristotle in the passage, *De Part. Anim.* ii. 1, to which note 33 refers.

[2] Whether primitive heat or the sun's heat, is not stated, but from Alex. *Meteorolog.* 93 b, the sun's heat seems to be intended.

[3] Diog. ix. 57: *τὴν δὲ γῆν στρογγύλην, ἐρηρεισμένην ἐν τῷ μέσῳ, τὴν σύστασιν εἰληφυῖαν κατὰ τὴν ἐκ τοῦ θερμοῦ περιφορὰν καὶ πῆξιν ὑπὸ τοῦ ψυχροῦ*, on which cf. Panzerbieter, p. 117 sq.

[4] According to the *Plac.* ii. 8, 1 (Stobæus, i. 358; Ps. Galen, c. 11, to the same effect) Diogenes and Anaxagoras maintained: *μετὰ τὸ συστῆναι τὸν κόσμον καὶ τὰ ζῷα ἐκ τῆς γῆς ἐξαγαγεῖν ἐγκλιθῆναί πως τὸν κόσμον ἐκ τοῦ αὐτομάτου εἰς τὸ μεσημβρινὸν αὐτοῦ μέρος* (*ἴσως*, adds the author doubtless in his own name, *ὑπὸ προνοίας*, in order to show the difference between the habitable and uninhabitable zones). Anaxagoras, however, said, according to Diog. ii. 9: *τὰ δ' ἄστρα κατ' ἀρχὰς μὲν θολοειδῶς ἐνεχθῆναι ὥστε κατὰ κορυφὴν τῆς γῆς* (perpendicularly over the upper surface of the earth, which, like Anaximenes and others, he supposed to be shaped like a cylinder, cf. vol. ii. *Anax.*) *τὸν ἀεὶ φαινόμενον εἶναι πόλον, ὕστερον δὲ τὴν ἔγκλισιν λαβεῖν*; so that, according to this, the stars in their daily revolution would at first have only turned from east to west laterally around the earth's disc, and those above our horizon would never have gone below it. The obliquity of the earth's axis to its surface was produced later, and caused the paths of the sun and

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stars to cut the plane of the horizon; hence arose the alternation of day and night. What we are to think in regard to the details of this system is (as Panzerbieter, p. 129 sqq. shows) hard to say. If the whole *universe*, that is, the heavens and the earth, inclined to the south, nothing would have changed in the position of the earth in relation to the heavens, and the temporary disappearance of most of the stars below the horizon, and the alternation of day and night, would be inexplicable. If the *heavens* (or which is the same thing, the upper end of the earth's axis) had inclined to the south, the sun in its revolution around this axis would have come nearer and nearer the horizon the further south it went. It would have risen in the west and set in the east; we should have had midnight when it was in the south; midday when it was in the north. If, on the other hand, the *earth* had inclined to the south and the axis of the heavens had remained unaltered, it would seem that the sea and all the waters must have overflowed the southern part of the earth's surface. Panzerbieter, therefore, conjectures that Anaxagoras made the heavens incline not to the south, but to the north, and that in the passage in the *Placita* we should perhaps read *προσβόρειον* or *μεσοβόρειον*, instead of *μεσημβρινόν*. But considering that our three texts are agreed upon the word, this is scarcely credible. We shall, however, find (*infra*, vol. ii.) that Leucippus and Democritus believed in a depression of the southern part of the earth's disc. If these philosophers could discover an expedient unknown to us but satisfactory to them, by which they could escape the obvious difficulties of this hypothesis, Diogenes and Anaxagoras could also have discovered one; and on the other hand, their theory of the inclination of the earth gives us a clue to the opinions of Leucippus and Democritus on the same subject.

[1] Arist. *Meteor.* ii. 2, 355 a, 21;

the air penetrates: if the outlets of these are blocked up, there are earthquakes.[1] In the same way Diogenes held the sun and stars[2] to be porous bodies, of a formation like pumice stone, the hollows of which are filled with fire or fiery air.[3] The theory of the origin of the stars from moist exhalations,[4] in connection with that just quoted from Alexander on the growth of the heavens by the evaporations of the earth, would lead us to conjecture that Diogenes supposed the sun alone to have been at first formed from the warm air drawn upwards, and the stars to have afterwards arisen from the vapours evolved by the sun's heat, by which vapours the sun himself was thought to have been continually sustained. As this nourishment is at times exhausted in each part of the world, the sun (so at least Alexander represents the doctrine of Diogenes) changes his place, as a beast his pasture.[5]

Alex. *Meteorol.* 91 a; 93 b, probably following Theophrastus; cf. *supra*, p. 254, 1.

[1] Seneca, *Qu. Nat.* vi. 15; cf. iv. 2, 28.

[2] Among which he likewise reckoned comets, *Plac.* iii. 2, 9; unless Diogenes, the Stoic, is here meant.

[3] Stob. *Ecl.* i. 528, 552, 508; Plut. *Plac.* ii. 13, 4; Theod. *Gr. aff. cur.* iv. 17, p. 59. According to the last three passages, meteoric stones are similar bodies; but it would seem that they only take fire in falling; vide Panzerbieter, 122 sq.

[4] So, at least, Stob. 522 says of the moon, when he asserts that Diogenes held it to be a κισσηροειδὲς ἄναμμα. Panzerbieter, p. 121 sq., interprets in the same way the statement in Stob. 508 (Plut. *loc. cit.*) that the stars, according to Diogenes, are διάπνοιαι (exhalations) τοῦ κόσμου; and he is probably more correct than Ritter (i. 232) who, by διάπνοιαι, understands organs of respiration. Theodoret, *loc. cit.*, ascribes the διαπνοὰς to the stars themselves; it would be easier to connect them with the fiery vapours streaming from the stars.

[5] Cf. p. 254, 1. Some other theories of Diogenes on thunder and lightning (Stob. i. 594; Sen. *Qu. Nat.* ii. 20), on the winds, Alex. *loc. cit.* (cf. Arist. *Meteor.* ii. 1, beginning), on the causes of the inundation of the Nile (Sen. *Qu. Nat.* iv. 2, 27; *Schol. in Apollon. Rhod.* iv. 269) are discussed by Panzerbieter, p. 133 sqq.

Diogenes shared with Anaxagoras and other physicists the belief that living creatures[1] and likewise plants[2] were produced out of the earth, no doubt by the influence of the sun's heat. In an analogous manner he explained the process of generation, by the influence of the vivifying heat of the body of the mother on the seed.[3] In accordance with his general standpoint, he thought the soul to be a warm, dry air. As the air is capable of endless diversity, souls likewise are as various as the kinds and individual natures to which they belong.[4] This substance of the soul he appears to have derived partly from the seed,[5] and partly from the outer air entering the lungs after birth;[6] and its warmth, according to the above theory, from the warmth of the mother. The diffusion of life throughout the whole body he explained by the theory that the soul or warm vital air streams along with the blood through the veins.[7] In support of this doctrine he entered into a detailed, and according to the then state of anatomical knowledge, an accurate description of the venal system.[1] Sensations he supposed to arise from the contact of the vital air with external impressions,[2] and sleep and death from the partial or entire expulsion of the air by the blood.[3] The seat of sensation he sought in the air contained in the brain;[4] appealing in proof of this to the phenomenon, that we are not conscious of external impressions when we are occupied with something else.[5] Desire and disinclination, courage, health, and so forth, were the effect, he thought, of the various proportions in which air mingles with the blood.[6] The intellectual inferiority of sleeping and intoxicated persons, of children, and of animals, he attributed to the greater density and moisture, and the less perfect circulation of the vital air.[7] The vital air itself, however, he was of course obliged to presuppose in all living creatures. On this ground he tried to prove, for example, that fishes and oysters have also the power of breathing.[8] He even ascribed something analogous to respiration to metals, supposing them to absorb damp vapours (*ἰκμὰς*), and to exude them again, and thus seeking to explain the attractive power of the magnet.[1] Only animals, however, he considered, can breathe the air as such. Plants are entirely irrational, for the reason that they do not breathe it.[2]

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[1] *Placita*, ii. 8, 1; Stob. i. 358.

[2] Theophrastus, *Hist. Plant.* iii. 1, 4.

[3] For further details, cf. Panzerbieter, 124 sqq., after Censorin. *Di. Nat.* c. 5, 9; Plut. *Plac.* v. 15, 4 etc.

[4] Fr. 6, after the words quoted, p. 291, 1: *καὶ πάντων ζῴων δὲ ἡ ψυχὴ τὸ αὐτό ἐστιν, ἀὴρ θερμότερος μὲν τοῦ ἔξω, ἐν ᾧ ἐσμὲν, τοῦ μέντοι παρὰ τῷ ἡελίῳ πολλὸν ψυχρότερος. ὅμοιον δὲ τοῦτο τὸ θερμὸν οὐδενὸς τῶν ζῴων ἐστὶν, ἐπεὶ οὐδὲ τῶν ἀνθρώπων ἀλλήλοις. ἀλλὰ διαφέρει μέγα μὲν οὒ, ἀλλ' ὥστε παραπλήσια εἶναι, οὐ μέντοι ἀτρεκέως γε ὅμοιον ἐόν . . . ἅτε οὖν πολυτρόπου ἐνεούσης τῆς ἑτεροιώσιος πολύτροπα καὶ τὰ ζῷα καὶ πολλὰ καὶ οὔτε ἰδέην ἀλλήλοις ἐοικότα οὔτε δίαιταν οὔτε νόησιν ὑπὸ τοῦ πλήθεος τῶν ἑτεροιώσεων· ὅμως δὲ*, &c. (*supra*, p. 287, 7); cf. Theophrastus, *De Sensu*, 39, 44.

[5] For he expressly remarks that the seed is like air (*πνευματῶδες*) and foam, and derives thence the designation, *ἀφροδίσια*. Vide *supra*, p. 287, 7; Clemens, *Pædag.* i. 105 C.

[6] *Plac.* v. 15, 4.

[7] Simpl. *loc. cit.*; cf. Theophrastus, *De Sensu*, 39 sqq. From these passages it is clear that Diogenes limited the habitation of the soul to no particular organ; the statement, therefore, in the *Placita*, iv. 5, 7, that he transferred the *ἡγεμονικὸν* to the *ἀρτηριακὴ κοιλίᾳ τῆς καρδίας*, can only be accepted in the sense that this is the *chief seat* of the vivifying air. Cf. Panzerbieter, 87 sq.

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[1] Given by Aristotle, *H. Anim.* iii. 2, 511 b, 30 sqq., commented on by Panzerbieter, p. 72 sqq.

[2] The somewhat ambiguous statements, *Placita* iv. 18, 2; 16, 3; confused by the introduction of the Stoic ἡγεμονικὸν, are discussed by Panzerbieter, 86, 90; further details are given by Theophrastus, *loc. cit.*; cf. Philippson, Ὕλη ἀνθρωπίνη, 101 sqq.

[3] *Plac.* v. 23, 3.

[4] Smell, says Theophrastus, *loc. cit.*, he attributed τῷ περὶ τὸν ἐγκέφαλον ἀέρι; τοῦτον γὰρ ἄθρουν εἶναι καὶ σύμμετρον τῇ ἀναπνοῇ. Hearing arises: ὅταν ὁ ἐν τοῖς ὠσὶν ἀὴρ κινηθεὶς ὑπὸ τοῦ ἔξω διαδῷ πρὸς τὸν ἐγκέφαλον; sight, when the image that enters the eye combines with the air within (μίγνυσθαι).

[5] *Loc. cit.* 42: ὅτι δὲ ὁ ἐντὸς ἀὴρ αἰσθάνεται μικρὸν ὢν μόριον τοῦ θεοῦ, σημεῖον εἶναι, ὅτι πολλάκις πρὸς ἄλλα τὸν νοῦν ἔχοντες οὔθ' ὁρῶμεν οὔτ' ἀκούομεν.

[6] Theophrastus, *loc. cit.* 43.

[7] Vide *supra*, p. 296, 2; Theophrastus, *loc. cit.* 44 sqq.; *Plac.* v. 20.

[8] Arist. *De Respir.* c. 2, 470 b, 30; Panzer. 95.

Like Anaximander and Anaximenes, Diogenes is said to have assumed the perpetual alternation of the world's construction and destruction, and an endless number of successive worlds. Simplicius[3] expressly says this, and the statement that Diogenes believed in an infinity of worlds[4] must have reference to it, for his whole cosmogony shows, even more clearly than the assertion of Simplicius (*loc. cit.*),[5] that he could only conceive the totality of simultaneous things as one whole limited in space. Stobæus[6] speaks of a future end of the world, and Alexander,[7] of a gradual drying up of the sea, which must both have a similar reference; and even without this explicit testimony, we must have supposed Diogenes on this point, likewise, to have been in agreement with his predecessors.

In considering his theory as a whole, we must allow that notwithstanding its superiority to the previous philosophic theories in scientific and literary form, and in its comparative wealth of empirical knowledge, there is a contradiction involved in its fundamental conceptions. If the orderly constitution of the world is only to be understood in reference to a world-forming reason, this presupposes that matter as such does not suffice to explain it; its cause cannot therefore be sought in one elementary body, and so Diogenes is forced to ascribe to this body qualities which not merely from our point of view, but absolutely and directly, exclude one another; for on the one hand he describes it as the subtlest and rarest, because it is the all-permeating and all-animating, and on the other, he makes things arise from it, not only by condensation, but also by rarefaction, which would be impossible if the primitive element were itself the rarest in existence.[1] That it is not merely[2] the warm air, or the soul, but air in general that Diogenes calls the rarest, we are at any rate clearly told by Aristotle,[3] who says that Diogenes held the soul to be air, because air is the rarest element and the primitive matter; and Diogenes himself (Fr. 6) says that the air is in all things, and permeates all things, which could not be unless it were itself the subtlest element. Nor can rarefaction[4] refer to a secondary form of air arising from previous condensation; for the ancient philosophers, with one accord, attribute the power of rarefaction, as well as condensation, to primitive matter;[5] and this indeed lies in the nature of things, for rarefaction and condensation mutually presuppose each other, and a condensation of one portion of a body of air is impossible without the simultaneous rarefaction of another. Thus, there is a contradiction in the bases of the system, resulting from the fact that its author adopted the idea of a world-forming reason, without therefore abandoning the ancient Ionian materialism, and especially the theories of Anaximenes on primitive matter.

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[1] Alex. Aphr. *Quæst. Nat.* ii. 23, p. 138, Speng.

[2] Theophrastus, *loc. cit.* 44.

[3] *Phys.* 257 b; vide *supra*, p. 278, 1.

[4] Diog. ix. 57; Plut. *ap.* Eus. *Pr. Ev.* i. 8, 13; Stob. i. 496; Theodoret, *Gr. aff. cur.* iv. 15, p. 58.

[5] Where *κόσμος* could not be used in the singular if many contemporaneous worlds like those of Democritus were in question. *Plac.* ii. 1, 6 (Stob. i. 440) seems to refer to Diogenes the Stoic.

[6] i. 416, vide *supra*, p. 277, 4.

[7] *Meteorol.* 91 a, according to Theophrastus, vide *supra*, p. 251, 1.

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[1] As Bayle has already remarked, *Dict. Diogène. Rem.* B.

[2] As Panzerbieter (106) and Wendt zu Tennemann, i. 441, suppose.

[3] In the passage quoted, *supra*, p. 290, 1.

[4] As Ritter holds, *Ion. Phil.* p. 57.

[5] Vide *supra*, p. 290, 4.

This circumstance would in itself lead us to conjecture that Diogenes' theory did not wholly arise *out* of the development of the ancient Ionian physics, but under the influence of another philosophy, having a different standpoint; and that contradictory elements had therefore appeared in it. This conjecture becomes still more probable when we see, contemporaneously with Diogenes, the very definitions which contradict his materialistic presuppositions, brought forward by Anaxagoras in connection with a more logical doctrine. We have no certain information, it is true, as to the exact date of Diogenes,[1] but we have the testimony of Simplicius,[2] based probably upon Theophrastus, *that* he appeared later than Anaxagoras, and wrote in partial dependence upon him. The carefulness of Diogenes in regard to the details of natural science, and especially the great precision of his anatomical knowledge, would assign him to a period when observation had made some advances: the period of a Hippo and a Democritus.[1] In the same way we shall find reason to suppose him later than Empedocles. On these grounds some dependence of Diogenes on Anaxagoras seems probable, and the internal evidence of their doctrines is wholly in favour of this view. The striking similarity between them makes it hardly credible that these doctrines should have been produced independently of each other.[2] Not only do Diogenes and Anaxagoras both require a world-forming reason, but they require it on the same ground, that the order of the universe was otherwise inexplicable to them: both describe this reason as the subtlest of all things; both derive the soul and life essentially from it.[3] We cannot, however, consider Anaxagoras as dependent on Diogenes, and Diogenes as the historical link between him and the older physicists.[4]

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[1] The only fixed date, the mention of the aerolite of Aegospotamos, which fell 469 B.C. (Stob. i. 508; Theod. *Gr. aff. cur.* iv. 18, p. 59; and Panzerbieter, p. 1 sq.), leaves an ample margin.

[2] *Phys.* 6 a: καὶ Διογένης δὲ ὁ Ἀπολλωνιάτης, σχεδὸν νεώτατος τῶν περὶ ταῦτα σχολασάντων, τὰ μὲν πλεῖστα συμπεφορημένως γέγραφε, τὰ μὲν κατὰ Ἀναξαγόραν τὰ δὲ κατὰ Λεύκιππον λέγων. Cf. *supra*, p, 290, 1; p. 291, 1; with the appeal to Theophrastus. That Theophrastus really supposed Diogenes to be later than Anaxagoras seems probable likewise, because in discussing their theories he repeatedly places Diogenes after him. So *De Sensu*, 39; *Hist. Plant.* iii. i. 4; vide Philippson, Ὕλη ἀνθρωπίνη, 199. Diogenes is also described as a younger contemporary of Anaxagoras by Augustine, *Civ. Dei*, viii. 2; and Sidon. Apoll. xv. 89 sqq.; and for the same reason apparently

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in Cic. *N. D.* i. 12, 29, his name comes last among all the pre-Socratic philosophers.

[1] This date is further supported by the circumstance which Petersen has shown to be probable in his *Hippocratis Scripta ad Temp. Rat. Disposita*, part i. p. 30 (Hamb. 1839, *Gym-Progr.*), namely that Aristophanes, *Nub.* 227 sqq., is alluding to the doctrine of Diogenes spoken of on p. 297, 6; which doctrine in that case must even then have attracted attention in Athens.

[2] Panzerbieter, 19 sq.; Schaubach, *Anaxag. Fragm.* p. 32; Steinhart, *loc. cit.* 297, considers Diogenes to be rather earlier than Anaxagoras.

[3] Cf. the section on Anaxagoras, *infra*.

[4] Schleiermacher on *Diog.* Werke, 3te Abth. ii. 156 sq., 166 sqq.; Braniss, *Gesch. der Phil. s. Kant*, i. 128 sqq., vide *supra*, p. 167. Krische is less positive, vide *Forsch.* 170 sq. Schleiermacher, however, afterwards changed his opinion, for in his *Gesch. d. Phil.* p. 77 he describes Diogenes as an eclectic with-

Schleiermacher indeed thinks that had Diogenes been acquainted with the work of Anaxagoras, he must have expressly opposed Anaxagoras' theory that the air is something composite; but in the first place we have no evidence to show that he did not oppose it;[1] and in the second we have no right to apply the standards of modern philosophy to the methods of the ancients, nor to expect from these latter a profound investigation of theories differing from their own, such as even a Plato did not always impose upon himself. The main principle of Anaxagoras, however, the separation of the organising reason from matter, Diogenes seems to me clearly enough to oppose, in his 6th Fragment.[2] Schleiermacher indeed finds no trace in the passage of any polemic of this kind, but merely the tone of a person who is newly introducing the doctrine of *νοῦς*; but the care with which Diogenes demonstrates that all the qualities of intelligence belong to the air, gives me the opposite impression. In the same way it seems to me that Diogenes[3] is so careful to prove the unthinkableness of several primitive substances, because he had been preceded by some philosopher who denied the unity of the primitive matter. That he is alluding to Empedocles only, and not to Anaxagoras,[4] is improbable, considering the many other points of contact between Diogenes and Anaxagoras. If, however, he had Empedocles chiefly in view, that alone would show him to be

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out principle belonging, with the Sophists and Atomists, to the third section of pre-Socratic philosophy, the period of its decay.

[1] He says of himself in Simpl. *Phys.* 32 b: *πρὸς φυσιολόγους ἀντειρηκέναι, οὓς καλεῖ αὐτὸς σοφιστάς.*

[2] Vide *supra*, p. 287, 7.

[3] Fr. 2, vide *supra*, p. 286, 2.

[4] Krische, p. 171.

a younger contemporary of Anaxagoras, and his philosophy might be supposed to have appeared at a later date than that of Anaxagoras. Schleiermacher considers it more natural that spirit should first have been discovered in its union with matter, and afterwards in opposition to it; but this is hardly conclusive in regard to Anaxagoras's relation to Diogenes; for the direct unity of spirit with matter, which was the starting point of the elder physicists, we do not find in Diogenes; on the contrary, he introduces thought, because the purely physical explanation of phenomena does not satisfy him. But if the importance of thought has once been recognised, it is certainly more probable that the new principle should be first set up in abrupt opposition to material causes, than that it should be combined with them in so uncertain a manner as by Diogenes.[1] The whole question is decided by this fact, that the conception of a world-forming reason is only logically carried out by Anaxagoras; Diogenes on the contrary attempts to combine it in a contradictory manner, with a standpoint entirely out of harmony with it. This indecisive sort of eclecticism is much more in keeping with the younger philosopher, who desires to make use of the new ideas without renouncing the old, than with the philosopher to whom the new ideas belong as his original possession.[2] Diogenes is therefore, in my opinion, an adherent of the old Ionian physics, of the school of Anaximenes; sufficiently affected by the philosophic discovery of Anaxagoras to attempt a combination of his (Anaxagoras') doctrine with that of Anaximenes, but for the most part following Anaximenes in his principle and the application of it. That there would be a retrograde movement,[1] according to this view, from Anaxagoras to Diogenes proves nothing; for historical progress in general does not exclude retrogression as to particulars:[2] that Anaxagoras, on the other hand, cannot be immediately related to Anaximenes[3] is true; but we have no right to conclude from this that Diogenes (rather than Heracleitus, the Eleatics or the Atomists) forms the connecting link between them. Lastly, though the theory of the ὁμοιομερῆ may be a more artificial conception than the doctrine of Diogenes,[4] it by no means follows that it must be the more recent; it is quite conceivable, on the contrary, that the very difficulties of the Anaxagorean explanation of nature may have had the effect of confirming Diogenes in his adherence to the more simple and ancient Ionic doctrine. The same might be conjectured in regard to the dualism of the principles professed by Anaxagoras;[5] and thus we must regard

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[1] This is also in opposition to Krische, p. 172.

[2] We cannot argue much from the agreement of the two philosophers in certain physical theories, such as the form of the earth, the primitive lateral movement and subsequent inclination of the vault of heaven; the opinion that the stars are stony masses; or on the doctrine of the senses, for such theories are, as a rule, so little connected with philosophic principles, that either philosopher might equally

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well have borrowed them from the other. But Diogenes' explanation of the sensuous perception, at any rate, shows a development of the doctrine of Anaxagoras (vide Philippson, Ὕλη ἀνθρωπίνη, 199), and his superiority in empirical knowledge marks him rather as a contemporary of Democritus than a predecessor of Anaxagoras. In his theories also of the magnet he seems to follow Empedocles.

[1] Schleiermacher, *loc. cit.* 166.

[2] From Anaxagoras to Archelaus there is a similar retrogression.

[3] Schleiermacher, *loc. cit.*

[4] *Ibid.*

[5] On this account, Brandis (i. 272) considers Diogenes, with Archelaus and the Atomists, in the light of a reaction against the dualism of Anaxagoras.

the theory of Diogenes as the attempt of a later philosopher, partly to save the physical doctrine of Anaximenes and the earlier Ionians as against the innovations of Anaxagoras, and partly to combine them with each other.[1]

However noteworthy this attempt may be, the philosophic importance of it cannot be ranked very high;[2] the chief merit of Diogenes seems to consist in his having enlarged the range of the empirical knowledge of nature, and laboured to prove more completely the life and teleological constitution of nature in detail. But these ideas were themselves supplied to him by his predecessors, Anaxagoras and the ancient physicists. Greek philosophy, as a whole, had in the time of Diogenes long since struck out paths that conducted it far beyond the point of the earlier Ionian physics.[3]

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[1] As is thought by most modern writers, cf. Reinhold, *Gesch. d. Phil.* i. 60; Fries, *Gesch. d. Phil.* i. 236 sq.; Wendt zu Tennemann, i. 427 sqq.; Brandis, *loc. cit.*; Philippson, *loc. cit.*, 198 sqq.; Ueberweg *Grundr.* i. 42, etc.

[2] The doctrine that Steinhart (*loc. cit.* p. 298) finds in him, and considers an important advance, viz., 'that all the Phenomenal is to be regarded as the self-abnegation of a principle that is permanent and persistent in itself,' goes far beyond any of the actual expressions of Diogenes. In reality, he merely says (Fr. 2; vide *supra*, p. 286, 2) that all becoming and all reciprocal action of things among themselves presupposes the unity of their primitive matter. This is, in truth, a noteworthy and pregnant thought, but the conception of primitive matter and of the relation of primitive matter to things derived, are the same with him as with Anaximenes.

[3] We are reminded of the physical notions of Diogenes, or, at any rate, of the ancient Ionic school, by the Pseudo-Hippocratic work, *περὶ φύσιος παιδίου* (cf. Petersen, p. 30 sq. of the treatise quoted *supra*, p. 301, 1). Here also we find evidence of the continuance of that school.

THE PYTHAGOREANS.[1]

I. SOURCES OF OUR KNOWLEDGE IN REGARD TO THE PYTHAGOREAN PHILOSOPHY.

Among all the schools of philosophy known to us, there is none of which the history is so overgrown, we may almost say, so concealed by myths and fictions, and the doctrines of which have been so replaced in the course of tradition by such a mass of later constituents, as that of the Pythagoreans. Pythagoras and his school are seldom mentioned by writers anterior to Aristotle,[2] and even from Plato, whose connection with them was so close, we can glean very few historical details respecting them. Aristotle, indeed, bestowed much attention on the Pythagorean doctrine; not only discussing it in the course of his more comprehensive researches, but also treating it in separate treatises:[1] yet when we compare what he says with later expositions, it is found to be very simple and almost meagre. While later authors can expatiate at length upon Pythagoras and his doctrines, he is never mentioned, or at most once or twice, by Aristotle; his philosophic doctrines are passed over in silence, and the Pythagoreans are everywhere spoken of as if the writer were ignorant whether, and how far, their theories were really derived from Pythagoras himself.[2] Even the accounts which we get from the writings of the older Peripatetics and their contemporaries—Theophrastus, Eudemus, Aristoxenus, Dicæarchus, Heracleides, and Eudoxus [1]—are far slighter and more cautious than the subsequent tradition; nevertheless, from them we can see that legend had already taken possession of Pythagoras and his personal history; and that the later Peripatetics had begun to develop the Pythagorean doctrines according to their fancy.

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[1] The recent literature concerning Pythagoras and his school is given by Ueberweg, *Grundr.* i. 48. Of more comprehensive works, besides the accounts of Greek philosophy in general, and Ritter's *Gesch. d. Pythag. Phil.* (1826), we have the second volume of Röth's *Gesch. d. Abendlichen Philosophie,* which treats at great length (*Abth.* 1, pp. 261-984, and 2, pp. 48–319) of Pythagoras; and Chaignet's work in two volumes, *Pythagore et la Philosophie Pythagoricienne.* Röth's exposition, however, is so entirely devoid of all literary and historical criticism, launches out so confidently into the most arbitrary conjectures and the most extravagant fancies, and leaves so much to be desired in regard to the intelligent apprehension and the correct reproduction of authorities, that in respect to our historical knowledge of Pythagoreanism, hardly anything is to be learned from it. Chaignet's careful work displays much more sobriety. But he places far too great confidence in spurious fragments and untrustworthy statements, and is thus not seldom misled into theories, which cannot stand before a more searching criticism. This could scarcely be otherwise, since he starts from the presupposition (i. 250, 4) that the authorities (without exception) are '*valables, tant qu'on n'a pas démontré l'impossibilité qu'ils ne le soient pas,*' instead of asking in each individual case whether the testimony is based on a tradition, founded on the historical fact, and only in proportion as this seems probable, giving credence to it.

[2] The little that can be quoted respecting them from Xenophanes, Heracleitus, Democritus, Herodotus, Io of Chios, Plato, Isocrates, Anaximander the younger, and Andron of Ephesus, will be noticed in the proper place.

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[1] The statements concerning the writings in question, περὶ τῶν Πυθαγορείων, περὶ τῆς Ἀρχυτείου φιλοσοφίας, τὰ ἐκ τοῦ Τιμαίου καὶ τῶν Ἀρχυτείων, πρὸς τὰ Ἀλκμαίωνος, are given in *Part. ii. b*, p. 48, second edition. As to the treatise, περὶ τῶν Πυθαγορείων, vide also Alexander *in Metaph.* 542 b, 5; *Fr.* 31, 1 Bon.; Stob. *Ecl.* i. 380; Theo, *Arithm.* 30; Plut. *ap. Gell. N. A.* iv. 11, 12; Porphyry, *V. Pythag.* 41; Diog. viii. 19, cf. Brandis, *Gr. Röm. Phil.* i. 439 sq.; ii. b 1, 85; Rose, *De Arist. libr. ord.* 79 sqq. Perhaps the so-called treatises on Archytas and the rest are identical with those on the Pythagoreans, or with certain parts of them. Meanwhile, however probable it may be that the treatise on Archytas is spurious, this is not substantiated by Gruppe (*Ueber d. Fragm. d. Arch.* 79 sq.), or by Rose's argument from the fragment hereafter to be quoted or by what he adduces (*loc. cit.*) from Damascius. Still more hazardous is Rose's repudiation of all the above writings. The quotation in Diog. viii. 34, Ἀριστοτέλης περὶ τῶν κυάμων, would equally apply to a portion of the treatise on the Pythagoreans, if, indeed (as is most likely), there be not some misunderstanding or interpolation in the passage.

[2] οἱ καλούμενοι Πυθαγόρειοι; *Metaph.* i. 5, at the beginning; i. 8, 989 b, 29; *Meteor.* i. 8, 345 a, 14; οἱ περὶ τὴν Ἰταλίαν καλούμενοι δὲ Πυθαγόρειοι, *De Cœlo*, ii. 13, 293 a, 20; τῶν Ἰταλικῶν τινες καὶ καλουμένων Πυθαγορείων, *Meteor.* i. 6, 342 b, 30; cf. Schwegler, *Arist. Metaph.* iii. 44.

These sources (of which it is true we possess only fragments) give us scarcely a single detail which we did not already know through Aristotle. Farther developments of the Pythagorean legend, which relate, however, rather to the history of Pythagoras and his school, than to their doctrines, appear during the third and second centuries, in the statements of Epicurus, Timæus, Neanthes, Hermippus, Hieronymus, Hippobotus, and others. But it was not until the time of the Neo-Pythagoreans, when Apollonius of Tyana wrote his Life of Pythagoras, when Moderatus compiled a long and detailed work on the Pythagorean Philosophy, when Nicomachus treated the theory of numbers and theology in accordance with the principles of his own school—that the authorities concerning Pythagoras and his doctrines became copious enough to make such expositions as those of Porphyry and Iamblichus possible.[2] Thus the tradition respecting Pythagoreanism and its founder grows fuller and fuller, the farther removed it is from the date of these phenomena; and more and more scanty, the nearer we approach them. With the range and extent of the accounts, their nature likewise changes. At first many miraculous stories about Pythagoras were in circulation. In course of time his whole history developes into a continuous series of the most extraordinary events. In the older statements, the Pythagorean system bore a simple and primitive character, in harmony with the general tendency of the pre-Socratic philosophy; according to the later representation, it approximates so greatly to the Platonic and Aristotelian doctrines that the Pythagoreans of the Christian period could even maintain[1] that the Philosophers of the Academy and the Lyceum had stolen their so-called discoveries, one and all, from Pythagoras.[2] It is plain that such a development of the tradition could not have been brought about by history, for how can we suppose that the writers of the Christian period had at their command a mass of authentic information unknown to Plato and Aristotle; and how can we recognise as genuine Pythagorean doctrines, propositions which Plato and Aristotle not only do not attribute to the Pythagoreans, but for the most part expressly deny that they held, and claim as their own personal discoveries? The so-called Pythagorean doctrines which are not acknowledged as such by ancient authorities are Neo-Pythagorean, and the miraculous tales and improbable combinations with which Pythagorean history is so largely adorned in the later authors, no doubt in great part emanate from the same source.

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[1] Röth, *Abendl. Phil.* ii. a, 270, adds to these Lyco, the opponent of Aristotle (cf. Part ii. b, 36, 2, second ed.), and Cleanthes the Stoic. But it is more probable that the former was a Neo-Pythagorean than a contemporary of Aristotle; and the Cleanthes of Porphyry is certainly not the Stoic, but most likely a misspelling for Neanthes (of Cyzicus).

[2] To the beginning of this period belongs also (Part iii. b, 74 sqq.) the work from which Alexander Polyhistor (Diog. viii. 24 sq.) has taken his exposition of the Pythagorean doctrine, and on which that of Sextus, *Pyrrh.* iii. 152 sqq.; *Math.* vii. 94 sqq.; x. 249 sqq., likewise appears to be based.

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[1] Porphyry, *V. Pyth.* 53, probably after Moderatus.

[2] It is clear that precisely the opposite was actually the case, and that the ancient Pythagorean doctrine contained none of the accretions which afterwards made their appearance. This is betrayed by the author when he says that Plato and Aristotle collected all that they could not adopt, and omitting the remainder, called *that* the whole of the Pythagorean doctrine; and also in the statement of Moderatus (*loc. cit.* 48) that the number theory with Pythagoras and his disciples had been only symbolical of a higher speculation (cf. Part iii. b, 96 sq., second edition).

But if the untrustworthy and unhistorical character of these expositions is in the main indisputable, we cannot venture to make use of the statements they contain, even where these statements are not in themselves opposed to historical probability, and to the more ancient and trustworthy authorities; for how can we, in regard to minor particulars, trust the assertions of those who have grossly deceived us in the most important matters? In all cases therefore where the later authorities, subsequent to the appearance of Neo-Pythagoreism, are unsupported by other testimony, *their* statements may generally be supposed to rest, not on real knowledge or credible tradition, but on dogmatic presuppositions, party interests, uncertain legends, arbitrary inventions, or falsified writings. Even the agreement of several such authorities cannot prove much, as they are accustomed to transcribe one from the other without any preliminary criticism;[1] their assertions merit attention only in cases where they may either be directly referred to older sources, or where their internal nature justifies us in the belief that they are founded on historical tradition.

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[1] Thus Jamblichus copies Porphyry, and both of them, as far as we may judge from their quotations, copied Apollonius and Moderatus.

What has just been said in regard to the indirect authorities for the Pythagorean doctrine, equally applies to the so-called direct sources. Later writers, belonging almost without exception to the Neo-Pythagorean and Neo-Platonic period, speak of an extensive Pythagorean literature, the nature and compass of which we may gather not only from the few writings we possess, but far more from the numerous fragments which exist of lost works.[1] A very small fraction, however, of these writings may with any probability be ascribed to the ancient Pythagorean school. Had this school possessed such a mass of written works, it would be hard to understand why the ancient authors should not contain more distinct allusions to them, and especially why Aristotle should be so entirely silent as to Pythagoras' own doctrine,[2] when several of these writings bear his very name.[1] But we are expressly

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[1] A review of these is given in Part iii. b, p. 85 sqq., second edition. Mullach, however, has printed, in his second volume of fragments, most of those omitted in the first.

[2] Diogenes, viii. 6, mentions three works of Pythagoras: a *παιδευτικὸν*, a *πολιτικὸν*, and a *φυσικόν*. Heracleides Lembus (about 180 B.C.) besides these speaks of a treatise, *περὶ τοῦ ὅλου*, and a *ἱερὸς λόγος*, in hexameters. How this last is related to the *ἱερὸς λόγος*, consisting of twenty-four rhapsodies which, according to Suidas, must be attributed to Orpheus, and according to others, was written by Theognetus the Thessalian, or Cercops the Pythagorean, and is probably identical with the Orphic Theogony (Lobeck, *Aglaoph.* i. 714) cannot be discovered. That the fragments of a *Πυθαγόρειος ὕμνος* about number (ap. Proclus *in Tim.* 155 C, 269 B, 331 E, 212 A, 6 A, 96 D; Syrian *in Metaph.* 59 b; *Schol. in Arist.* 893 a, 19 sqq.; Simplicius, *Phys.* 104 b; *De Cælo*, 259 a, 37; *Schol.* 511 b, 12; cf. Themist. *in Phys.* iii. 4, p. 220, 22 sq.; *in De An.* i. 2, pp. 20, 21; Theo, *Mus.* c. 38, p. 155; Sext. *Math.* iv. 2; vii. 94, 109; Iambl. *V. P.* 162. and Lobeck, *loc. cit.*) belong to the *ιερος λόγος* of Pythagoras, it is impossible to prove; but Proclus distinguishes the Pythagorean hymn very distinctly from the Orphic poem. Iambl. *V. P.* 146; cf. Proclus *in Tim.* 289 B, gives the commencement of a second *ἱερὸς λόγος* in prose, which was also ascribed to Telauges. Fragments of this are to be found in Iamblichus, *Nicom. Arithm.* p.

11; Syrian *in Metaph.*; *Schol. in Ar.* 842 a, 8, 902 a, 24, 911 b, 2, 931 a, 5; Hierocles *in Carm. Aur.* p. 166 (*Philos. Gr. Fr.* ed. Mull. i. 464 b); cf. also Proclus *in Euclid.* p. 7 (222 Friedl.). This *ἱερὸς λόγος*, as appears from the above quotations, is chiefly concerned with the theological and metaphysical import of numbers. In Diod. i. 98 there is mention of a *ἱερὸς λόγος* of Pythagoras, by which we must probably understand the one in verse, and not the prose work which seems to have been later. Besides the above-named writings Heracleides, *loc. cit.*, notices others; *περὶ ψυχῆς, περὶ εὐσεβείας*, 'Helothales,' and 'Croton' (these last were dialogues, as it would seem), *καὶ ἄλλους*; Iamblichus (*Theol. Arithm.* p. 19) a *σύγγραμμα περὶ θεῶν*, probably to be distinguished from the *ἱεροὶ λόγοι*; Pliny, *Hist. Nat.* xxv. 2, 13; xxiv. 17, 156 sq., a book on the influences of plants; Galen, *De Remed. Parab.* vol. xiv. 567 K, a treatise *περὶ σκίλλης*; Proclus, *in Tim.* 141 D, a *λόγος πρὸς Ἄβαριν*; Tzetzes. *Chil.* ii. 888 sq. (cf. Harless, *in Fabr. Bibl. Gr.* i. 786), *προγνωστικὰ βιβλία*; Malal. 66 D; Cedren. 138 C, a history of the war between the Samians and Cyrus; Porphyry, p. 16, an inscription on the grave of Apollo in Delos. Io of Chios (or more probably Epigenes, to whom Kallimachus attributed the *τριαγμοί*) asserted that he composed pseudo-Orphic writings (Clemens, *loc. cit.*; Diog. viii. 8), and that Hippasus had stolen from him a *μυστικὸς λόγος*, and from Asto, the Crotonian, a whole series of works (Diogenes, viii. 7). A *κατάβασις εἰς ᾅδου* seems to have given rise to the tale of the philosopher's journey to Hades (vide *infra*, 340, 2). Nietzsche (*Beitr. z. Quellenkunde, d. Laërt. Diog.*, *Basel*, 1870, p. 16 sq.) refers to the same source the statement in Diog. viii.: *αὐτοῦ λέγουσι καὶ τὰς σκοπιάδας*, substituting conjecturally *σκοπὰς Ἀΐδαο* for *σκοπιάδας*. The verses in Justin (*De Monarch.* c. 2, end) have reference to a poem forged or interpolated by a Jewish hand; other fragments of Pythagorean writings are to be found in *Just. Cohort.* c. 19 (Clemens, *Protr.* 47 C, &c.; cf. Otto, note on the passage in Justin); Porph. *De Abstin.* iv. 18; Iambl. *Theol. Arithm.* 19; Syrian, *Schol. in Arist.* 912 a, 32 b, 4 sqq. It is doubtful whether there was a system of Arithmetic in circulation under the name of Pythagoras, to which the statement of his having written the first work on Arithmetic may refer (vide Malal. 67 a; Cedren. 138 D, 156 B; Isodor. *Orig.* iii. 2). The numerous moral maxims which Scobæus quotes in the *Florilegium* from Pythagoras do not seem to have been taken from any work falsely attributed to him. The so-called golden poem was by many ascribed to Pythagoras, although it does not itself lay claim to such an origin (vide Mullach in his edition of *Hierocles in Carm-aur.* 9 sq.; *Fragm. Philos. Gr.* i. 410, and the summaries of the extracts from Stobæus, *loc. cit.*), and Iamblichus, *V. P.* 158, 198, speaks in a general manner of many books embracing the whole of philosophy, which were some of them written by Pythagoras himself, and some under his name.

[1] For the story of the conceal-

told that Philolaus was the first Pythagorean who published a philosophical work, that before his time no Pythagorean writings were known,[1] and that Pythagoras himself wrote nothing;[2] nor did Hippasus,[3] although we possess some supposed fragments of his work. Iamblichus[4] says that Pythagorean writings were in exist-

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ment of these writings (vide *infra*, note 4), which, according to Iamblichus, was no longer believed, even in the time of Aristotle, cannot be brought forward, more especially if he had already been acquainted with them (vide preceding note). Röth's groundless statement that Aristotle and the other ancient authorities knew only of the Pythagoreans, the exoterics of the school, and not of the esoteric doctrines taught to the Pythagoreans—(an indispensable and fundamental presupposition of his whole exposition) will be examined *infra*. If this statement be disproved, there is an end of the attempt to reconstruct the *ἱερὸς λόγος* of Pythagoras from the fragments of the Orphic poem, said to be identical with it (Röth, ii. a, 609–764); since the Pythagorean origin of this poem is not only wholly undemonstrable, but quite incompatible with all credible accounts of the Pythagorean doctrine. Disregarding Lobeck's classical labours, Röth confuses in such an uncritical manner statements from Orphic and Pythagorean works relating to writings entirely distinct, and separated from each other by centuries; so that his whole pretentious and elaborate discussion can only mislead those who are less instructed, while for the learned it is utterly valueless.

[1] Diog. viii. 15, but especially section 85: *τοῦτόν φησι Δημήτριος* (Demetrius Magnes, the well-known contemporary of Cicero) *ἐν Ὁμωνύμοις πρῶτον ἐκδοῦναι τῶν Πυθαγορικῶν περὶ φύσεως*. Iambl. *V. P.* 199; vide *infra*, note 4.

[2] Porph. *V. Pythag.* 57 (repeated by Iambl. *V. Pyth.* 252 sq.). After the persecution of Cylon: *ἐξέλιπε καὶ ἡ ἐπιστήμη, ἄῤῥητος ἐν τοῖς στήθεσιν ἔτι φυλαχθεῖσα ἄχρι τότε, μόνων τῶν δυσσυνέτων παρὰ τοῖς ἔξω διαμνημονευομένων· οὔτε γὰρ Πυθαγόρου σύγγραμμα ἦν*, and so on. Those consequently who escaped from the persecution wrote summaries of the Pythagorean doctrine for their adherents. But Porphyry himself presupposes that there were ancient Pythagorean writings, and, therefore, adds that the Pythagoreans collected them. In Diog. viii. 6, we read: *ἔνιοι μὲν οὖν Πυθαγόραν μηδὲ ἓν καταλειπεῖν σύγγραμμά φασι*. This is more emphatically stated in Plut. *Alex. Fort.* i. 4, p. 328; *Numa*, 22; Lucian, *De Salut.* c. 5; Galen, *De Hipp. et Plat.* i. 25; v. 6, T xv.; 68, 478, K (although he, in another place, vide *supra*, p. 312, quotes a work of Pythagoras); Joseph. *Con. Ap.* i. 22, perhaps after Aristobulus; Augustin, *De Cons. Evang.* i. 12.

[3] Diog. viii. 84: *φησὶ δ' αὐτὸν Δημήτριος ἐν Ὁμωνύμοις μηδὲν καταλιπεῖν σύγγραμμα.*

[4] *V. Pyth.* 199: *Θαυμάζεται δὲ καὶ ἡ τῆς φυλακῆς ἀκρίβεια· ἐν γὰρ το-*

ence, but that until the time of Philolaus they were strictly preserved as secret by the school, but this assertion can have no weight against the evidence we have just cited; it is rather indeed a confirmation of the fact that the later writers themselves could find no authentic traces of the existence of Pythagorean writings previous to Philolaus. When, therefore, the savants of the Alexandrian or Roman period presuppose that such writings must always have existed, at any rate within the Pythagorean school, this theory is entirely based on the assertions of the so-called ancient works themselves, and on the opinions of a generation which could form no idea of a philosophic school without philosophic literature, because it was itself accustomed to get its science from books. Moreover, the internal evidence of most of these reputed Pythagorean fragments is strongly against their authenticity. The greater number of the fragments of Philolaus indeed, as Böckh has shown in his excellent monograph,[1] must certainly be considered genuine, not merely on the score of external testimony, but also, and far more because in content and mode of expression they agree with one another, and are in harmony with all that we know from well authenticated sources as Pythagorean; there is only one passage of any importance in a philosophic point of view to which we must make an exception.[2] On the

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σαύταις γενεαῖς ἐτῶν οὐδεὶς οὐδενὶ φαίνεται τῶν Πυθαγορείων ὑπομνημάτων περιτετευχὼς πρὸ τῆς Φιλολάου ἡλικίας, ἀλλ' οὗτος πρῶτος ἐξήνεγκε τὰ θρυλούμενα ταῦτα τρία βιβλία.

[1] *Philolaus des Pythagoreer's Lehren, nebst den Bruchstücken seiner Werke*, 1819. Cf. also Preller, *Philol.*; *Allg. Encykl. von Ersch und Gruber*, sect. iii., vol. xxiii. 370 sq.

[2] Since the above was first written, the genuineness of these fragments of Philolaus, already de-

other hand, according to the above quotations, there

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nied by Rose; *Arist. libr. ord.* p. 2, has been warmly contested by Schaarschmidt (*Die angebliche Schriftstellerei des Philolaus*, 1864), and the work to which they belonged has been assigned to the first, or at earliest, the second century before Christ. Though I adhere to my original opinion respecting them, I cannot fully expound my reasons for it in this place, but will merely indicate the chief points. To begin with, as regards the *tradition* concerning the writing of Philolaus, the existence of a work under that name is presupposed by Hermippus (ap. Diog. viii. 85) and Satyrus (*ibid.* iii. 9) about 200 B.C., for they tell us that Plato bought the work of Philolaus, and copied his Timæus from it. Both speak of this work as well known, and it is difficult to see how, if it did not exist, the statement could have arisen. Besides, Hermippus borrowed the assertion from an older writer. Already about 240 B.C. the book was known to Neanthes, as is shown by the statement of this author in Diog. viii. 55, that up to the time of Philolaus and Empedocles the Pythagoreans admitted everyone to their instructions, but that when Empedocles had made known their doctrines in his poem, they resolved never to impart them to any other poet. The design of Neanthes in this story can only be to couple Philolaus with Empedocles as one of the first Pythagorean writers; not (as Schaarschmidt, p. 76 thinks) to account for the introduction of esoteric doctrines by the oral teaching of Philolaus; Philolaus in that teaching, according to Neanthes himself, only did what everyone else had done up to that time. Diogenes, it is true, afterwards speaks of Empedocles alone, and of the exclusion of poets; but he cannot legitimately conclude from this that Neanthes 'did not know as yet of any work written by Philolaus.' Diogenes makes this observation in his biography of Empedocles; he may perhaps have adopted from Neanthes only what concerned his subject. Or again, Neanthes may have merely mentioned the prohibition to which Empedocles, as the first of the so-called Pythagorean writers, had given rise. According to these authorities, too, we must refer the well-known verses of Timon. ap. Gell. *N. A.* iii. 17, to the work of Philolaus; for it is hardly conceivable that they should relate to no particular work, but to any Pythagorean book whatsoever (Schaarschmidt, 75). It is true that Philolaus is never mentioned by Aristotle, though a word is quoted from him in *Eth. Eud.* ii. 8, 1225 a, 33; and Plato in the *Timæus* places his physical theories, not in the mouth of Philolaus, but of a Pythagorean otherwise unknown. But Plato had every reason to do this, supposing there existed a writing of Philolaus which would immediately have exhibited the great difference of his physical doctrines from those of the Pythagoreans. And with regard to Aristotle, though it is impossible that he can have derived his numerous and minute statements about the Pythagorean doctrines merely from oral tradition, yet he never mentions his authorities; just as elsewhere he quotes much from the ancient philosophers can be no question as to the spuriousness of the writings

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without saying whence he gets it. We cannot, therefore, argue from his silence respecting Philolaus, that no work of his was known to him. On the other hand, if we compare *Metaph.* i. 5, 986 b, 2 sqq. with the fragment of Philolaus in Stob. *Ecl.* i. 454 sq. (vide *infra*, 371, 2); *Metaph.* xiii. 6, 1080 b, 20; xiv. 3, 1091 a, 13 sq., with Stob. i. 468; *Metaph.* i. 5, 985, b, 29 sq. with the fragment in Iambl. *Theol. Arithm.* p. 56, 22 (vide *infra*, § iii.), it will appear very probable that Aristotle in these passages is referring to the work of Philolaus; and considering the scanty number of the fragments we possess, it is not surprising that further proofs are not forthcoming. (For other details, cf. Zeller, *Aristoteles und Philolaos. Hermes.* x. 178 sq.) Xenocrates, too, according to Iambl. *Theol. Arithm.* p. 61 sq., occupied himself greatly with the writings of Philolaus; and if this evidence is not quite unimpeachable, yet it has in its favour that Xenocrates agrees with Philolaus in his doctrine of æther (vide Part ii. a, 809, 1). We meet with the same theory in the Platonic Epinomis (vide *loc. cit.* 894, 2), but there also (977 D, sqq.) there seem to be echoes of Philolaus (ap. Stob. i. 8, *infra*, 371, 1). The external evidence, however, is decidedly in favour of the supposition that Philolaus really composed the writing attributed to him, and that we have received from tradition genuine remnants of it. In his judgment of the fragments themselves, I cannot agree with Schaarschmidt, as he assigns them all, without exception, to the same author; and on this presupposition easily derives arguments from some against others; whereas the question of identity of authorship was the very first he should have determined. I, for my part, consider the interval so great between the fragment in Stobæus, *Ecl.* i. 420 (vide *infra*), and the large majority of the rest, both in form and content, that I could not ascribe all to the same author unless I called them *all* alike unauthentic. Schaarschmidt himself calls attention to the fact that the utterances of this *fragment* about the world-soul are in contradiction to the doctrine of the central fire elsewhere *attributed* to Philolaus. It further appears to me that, as he has not sufficiently discriminated between the *various* fragments, neither has he done so between the fragments of Philolaus's work, and the accounts given us *of* that work. He attributes (p. 37) to the 'fragmentist' the Stoic ἡγεμονικὸν, and the Platonic Demiurgus in the text, Stob. *Ecl.* i. 452, as well as (p. 30) the expressions, εἰλικρίνεια τῶν στοιχείων, φιλομετάβολος γένεσις, *ibid.* 488; whereas the author whom Stobæus follows may in this case, as in many others, have applied to ancient doctrines the language and conceptions of later times. On page 38 the conclusion drawn by Athenagoras (*Suppl.* 6), from a quite indefinite expression of Philolaus (the Unity and Immateriality of God), is treated as the saying of the so-called Philolaus himself. On page 53 'Philolaus' is said to speak in Stob. *Ecl.* i. 530, of a *triple* sun; though the narrator clearly distinguishes his own remark 'that, according to *Philolaus*, there was in some sort a triple attributed to Pythagoras; and the scattered fragments

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sun,' from what Philolaus actually said; and he afterwards directly ascribes two suns to Empedocles. There may indeed be found in the statements of writers like Stobæus, Pseudo-Plutarch, Censorinus, and Boethius about Philolaus, many inaccuracies, lacunæ, and uncertainties; but we ought not to consider this (as Schaarschmidt does, e.g. p. 53 sq., 55 sq. 72) a proof of the spuriousness of the writings which they are describing, for their statements have very often the same defects in cases where they can be confirmed by more trustworthy evidence. But Schaarschmidt seems to me not seldom to raise objections which can only be based on an incorrect view of the passages and doctrines in question. He says, for instance (p. 32 sqq.), that the passage in Stob. *Ecl.* i. 360 contradicts the statement of Aristotle (*De Cœlo*, ii. 2, 285 a, 10), that the Pythagoreans assumed only a right and a left in the world, and not an above and a below, a before and a behind; but this latter statement is explained by another from the work on the Pythagoreans (*Schol. in Arist.* 492 b, 39), which even, were it spurious, we could scarcely assign to a period so recent as the Neo-Pythagorean. The Pythagoreans (we there read) admitted no above and below in the ordinary and proper sense, because they identified the above with the left side of the world, and the below with the right; and at the same time the above with the circumference, and the below with the centre. This last conception seems to be precisely the meaning of the mutilated passage in Stobæus; it resolves the opposition of the above and the below into that of the outward and inward. Schaarschmidt (p. 38) also finds it inconceivable that Philolaus should have called the Central fire, τὸ πρᾶτον ἁρμοσθὲν τὸ ἓν (vide *infra*), but he might have understood it by the help of Aristotle, who equally speaks of the forming of the ἓν with reference to the central fire; and according to him, it was a recognised theory that the number One arose from the odd and the even. Nor can we with Schaarschmidt (p. 65) consider it un-Pythagorean that the ἄπειρον and περαῖνον should be distinguished from the ἄρτιον and περισσόν; for we find the same thing in the table of contraries (Arist. *Metaph.* i. 5, 986 a, 23). To pass over other instances, Schaarschmidt (p. 47 sqq.) cannot admit that the five elements of Philolaus belong to the ancient Pythagorean doctrine: 1st, because the Pythagoreans (he says), according to Aristotle, admitted no material element; 2, because Empedocles was the first to teach the doctrine of the four elements; and 3, because Aristotle was the first who added to these, as a fifth element, æther. All three of these reasons I dispute. First, the Pythagoreans no doubt put numbers in the place of material substances as the ultimate ground of things; but certain Pythagoreans, for example Philolaus, may nevertheless have sought to explain more precisely *how* things arise from numbers, by reducing the qualitative fundamental difference of bodies to the difference of form in their constituent atoms. Plato does this from a similar standpoint.

of these which have come down to us, both in respect

The Pythagorean doctrine does not assert that there are no bodies, but only that bodies are something derived. Second, in regard to Empedocles, that philosopher was unquestionably some decads anterior to Philolaus; why then may not his theory of the elements (as I suggested in my second edition, p. 298 sq., 508 sq.) have given rise to the theory of Philolaus? Third, it cannot be proved that Aristotle first taught the existence of a fifth element, though it played an important part in his doctrine. The origin of this idea is evidently Pythagorean. Æther is admitted by all the philosophers of the older Academy, who retrograded from Platonism to Pythagoreism; in the Epinomis, and by Speusippus, by Xenocrates, and by Plato himself at the end of his life (Part ii. a, 809, 1; 860, 1; 876, 1; 894, 2, 2nd ed.). For all these reasons, I can only agree with Schaarschmidt's conclusions to a very limited extent. No doubt the Philolaic fragments have not been transmitted to us free from adulteration. I have already (pp. 269, 305, 2nd ed.) questioned the value of the fragment of the περὶ ψυχῆς, given ap. Stob. *Ecl.* i. 420 sq. I have also expressed my doubts (*Ibid.* 271, 4, 6; 247, 3) of the monotheistic sentence cited by Philo, *Mundi Opif.* 23 A, and of the saying in Iamblichus, *in Nicol. Arithm.* 11. Of the other fragments, what is quoted in the third edition of this work, p. 387, from *Theol. Arithm.* 22, may perhaps most readily cause hesitation. But such a reflection does not seem impossible at a period when the conception of νοῦς had already been discovered by Anaxagoras; more especially as we find Aristotle (*Metaph.* i. 5, 985 b, 30) naming νοῦς and ψυχὴ among the things which were reduced by the Pythagoreans to particular numbers; while, on the other hand, it is deserving of note, that the Platonic and Aristotelian theory of the multiplicity of the parts of the soul which was known to other so-called Pythagoreans (vide Part iii. b. 120, 2nd ed.) is absent from this fragment; the differences which exist between the phenomena of life and those of the soul are here directly connected with the corporeal organs. The same argument tells in favour of the genuineness of most of these fragments. The influence of the Platonic and Aristotelian philosophy, which is so unmistakeable in all pseudo-Pythagorean writings, is not perceptible in them We find much that is fantastic and strange to us (for instance, the numerical symbolism, vide p. 337, third edition), but nothing that is distinctive of later Pythagoreism, such as the opposition of form and substance, spirit and matter, the transcendant conception of God, the eternity of the world, the astronomy of Plato and Aristotle, the world-soul and the developed physics of the Timæus. The tone and exposition (apart from certain particulars which are to be placed to the account of later expositions) entirely accord with the conception we should naturally form of the language of a Pythagorean in the time of Socrates; it also contains things which can scarcely be ascribed to a more recent author, such as the distributo their form and content,[1] can only serve to strengthen our suspicion. Opinions are likewise unanimous as to the spuriousness of the treatise on the World-soul, attributed to Timæus of Locris, but obviously an extract from the Timæus of Plato. The demonstration of Tennemann[2] in regard to this is amply sufficient. As to Ocellus of Lucania, and his work on the universe, the only question can be whether or not the work itself claims to be of ancient Pythagorean origin; for that it is not, is perfectly evident. Its latest editor, however, rightly maintains that the work claims for its author the so-called Pythagorean, to whom ancient writers with one accord[3] ascribe it, whenever they mention it at all. Of the other relics of the Pythagorean School, the most important are the works of Archytas; but after all that has been said on this subject in modern times,[4] my

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tion of chords (discussed by Böckh. *Philol.* 70), for which, according to Nicom. *Harm.* i. p. 9, *Meib.*, Pythagoras had already substituted the octachord. Schaarschmidt's judgment on the Philolaic fragments is endorsed by Ueberweg, *Grundr.* i. 47, 50, by Thilo, *Gesch. d. Phil.* i. 57, and Rothenbücher, *System der Pyth. nach den Angaben des Arist.* (Berlin, 1867). Rothenbücher seeks to establish his opinion by a criticism of the fragment, ap. Stob. *Ecl.* i. 454. I cannot, however, at present enter upon the discussion of this criticism, as there will be opportunity for replying to its chief allegations later on.

[1] The fragments are mostly Doric, but Pythagoras no doubt spoke the Ionic dialect of his native city, where he had lived up to the period of his manhood.

[2] *System der Plat. Phil.* i. 93 sqq.; *cf.* the further proof given by Hermann, *Gesch. und Syst. der Plat. Phil.* i. 701 sq.

[3] Mullach, *Aristot. de Melisso* &c.; *et Ocelli Luc. De univ. nat.* (1845), p. 20 sqq.; *Fragm. Philos.* i. 383; cf. Part iii. b, pp. 83, 99 115, second edition.

[4] Ritter, *Gesch. der Pyth. Phil.* 67 sqq.; *Gesch. der Phil.* i. 377; and Hartenstein, *De Archytæ Tarentini Fragm.* (Leipzig, 1833)—both, especially Ritter, discard the greater number of the fragments, and these the most important from a philosophic point of view. Eggers (*De Archytæ Tar. Vita Opp. et Phil.*, Paris, 1833); Petersen (*Zeitschrift für Alterthumsw.* 1836, 873 sqq.); Beckmann (*De Pythag. Reliquiis*); and Chaignet (*loc. cit.* i. 191 sqq., 255 sqq.) recognise the greater number. Gruppe (*über die Fragm. des Archytas*) repudiates

judgment is still that among the numerous longer or shorter fragments attributed to him, by far the greater number have preponderating evidence against them; and those which may be considered authentic can add little to our knowledge of the Pythagorean philosophy as a whole, belonging as they do chiefly to mathematics, or other specific branches of enquiry.[1] This judgment is not to be set aside by the fact that Petersen,[2] in order to explain the undeniably Platonic element in the so-called books of Archytas, regards him as having anticipated the Platonic doctrine of Ideas, and Beckmann[3] makes him out in this respect a disciple of Plato; for not a single ancient authority alludes to this pretended Platonism of Archytas. Where the relation between Plato and Archytas is mentioned, we hear only of a personal relation, or a scientific intercourse which would by no means involve a similarity in philosophic theories.[4] On the contrary, where the philo-

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all without exception; and Mullach (*Fr. Phil. Gr.* ii. 16 sq.) thinks it probable that we possess next to nothing of Archytas. Cf. Beckmann, p. 1.

[1] Cf. Aristotle, *Metaph.* viii. 2 g, E,; and Eudemus, ap. *Simpl. Phys.* 98 b,.108 a; Ptolemæus, *Harm.* i. 13; and Porphyry, *in Ptol. Harm.* p. 236 sq., 257, 267, 269, 277, 280, 310, 313, 315; cf. Part iii. b, 91, second edition.

[2] *Loc. cit.* 884, 890.

[3] *Loc. cit.* 16 sqq. Similarly Chaignet, i. 208.

[4] This, strictly speaking, is true of the two pieces of evidence on which Beckmann (p. 17 sq.) relies so much, namely that of Eratosthenes (ap. Eutoc. *in Archimed. De Sphæra et Cyl.* ii. 2, p. 144 Ox. quoted by Gruppe, p. 120) to the effect that of the mathematicians of the Academy (τοὺς παρὰ τῷ Πλάτωνι ἐν Ἀκαδημίᾳ γεωμέτρας) Archytas and Eudoxus were the two who solved the Delian problem; and that of the Pseudo-Demosthenes (*Amator.* p. 1415), who says that Archytas was previously held in contempt by his countrymen, but acquired his honourable reputation in consequence of his connection with Plato. The first of these statements is given by Eratosthenes himself as a mere legend; and the second has probably about as much historical foundation as another assertion in the same work: that Pericles became the great statesman he was, through the teaching of Anaxagoras.

sophic opinions of Archytas are spoken of, he is always described as a Pythagorean, and that not only by the more recent writers subsequent to Cicero's time,[1] but even as early as Aristoxenus,[2] whose acquaintance with the later Pythagoreans is beyond question; indeed Archytas clearly calls himself a Pythagorean,[3] in a fragment the authenticity of which can scarcely be disputed.[4] It is true that the School of Archytas is also mentioned as an independent school,[5] but that does not disprove our thesis. This school is as much a Pythagorean school as that of Xenocrates is Platonic, or that of Theophrastus Peripatetic. If, however, Archytas was a Pythagorean, he cannot have been at the same time an adherent of the doctrine of Ideas;

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[1] Among these Beckmann (p. 16) cites the following: Cic. *De Orat.* iii. 34, 139 (a passage which is remarkable, because while agreeing in other respects with the above mentioned testimony of the Pseudo-Demosthenes, it makes Philolaus, instead of Plato, the instructor of Archytas; we must read with Orelli, *Philolaus Archytam*, and not *Philolaum Archytas*). Ibid. *Fin.* v. 29, 87; Rep. i. 10; Valer. Max. iv. 1, ext.; vii. 7, 3, ext.; Apul. *Dogm. Plat.* i. 3, p. 178, Hild.; Diog. viii. 79; Hieron. *Epist.* 53, T. 1, 268, Mart. Olympiodor. *V. Plato*, p. 3, Westerm. To these may be added, besides Iamblichus, Ptolemæus, *Harm.* i. c. 13 sq.

[2] Diog. viii. 82: *γεγόνασι δ' Ἀρχῦται τέτταρες . . . τὸν δε Πυθαγορικὸν Ἀριστόξενός φησι μηδέποτε στρατηγοῦντα ἡττηθῆναι.* Beckmann's doubt of this passage is unfounded. Cf. also Diog. 79. We should be inclined to read Ἀρχίππου for Ἀρχύτου in the text of Iamblichus, *V. P.* p. 251 (*οἱ δὲ λοιποὶ τῶν Πυθαγορείων ἀπέστησαν τῆς Ἰταλίας πλὴν Ἀρχύτου τοῦ Ταραντίνου*), for in the time of Archytas there was no longer any necessity for the Pythagoreans to flee from Italy; the passage is, however, so mutilated, that we cannot even discover the connection in which the statement occurred in Aristoxenus.

[3] Cf. Part ii. b, 711 sq., and *infra*, p. 364, 4. Stob. *Floril.* 101, 4, calls him a Pythagorean. Suidas Ἀριστόξ., more precisely, a pupil of Xenophilus, the Pythagorean.

[4] According to Porph. *in Ptolem. Harm.* p. 236, his work, *περὶ μαθηματικῆς*, began with these words: *καλῶς μοι δοκοῦντι* [sc. *οἱ Πυθαγόρειοι*] *τὸ περὶ τὰ μαθήματα διαγνῶναι· καὶ οὐθὲν ἄτοπον, ὀρθῶς αὐτοὺς περὶ ἕκαστον θεωρεῖν· περὶ γὰρ τᾶς τῶν ὅλων φύσιος ὀρθῶς διαγνόντες ἔμελλον καὶ περὶ τῶν κατὰ μέρος οἷα ἐντὶ ὄψεσθαι.*

[5] Vide Beckmann, p. 23.

for it is not merely impossible to prove[1] that this doctrine was known to the Pythagoreans, but Aristotle's evidence is most distinctly to the contrary.[2] Since therefore in the fragments of the so-called Archytas we encounter Platonic as well as Peripatetic doctrines and expressions, we must consider these a sure sign of a later origin, and consequently reject by far the greater number of the fragments. Even supposing the modern case for their defence were successful, they could not be regarded as records of the Pythagorean doctrines; for if they can only be rescued by making their author a Platonist, we cannot be sure in any given case how far they reproduce the Pythagorean point of view.

A contemporary of Archytas, Lysis the Tarentine, has latterly been conjectured by Mullach[3] to be the author of the so-called Golden Poem; but the corrupt passage in Diogenes viii. 6[4] is no evidence for this, and the work itself is so colourless and disconnected, that it looks rather like a later collection of practical precepts, some of which had perhaps been long in circulation in a metrical form.[5] In any case, however, it does not materially contribute to our knowledge of the Pythagorean philosophy.

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[1] Plato's utterances in the Sophist, 246 sqq. cannot, as Petersen (*loc. cit.*) and Mallet (*Ecole de Mégare*, liii. sq.) believe, relate to the later Pythagoreans (cf. ii. a. 215 sq.), and the polemic of Aristotle's *Metaphysics* against a number-theory bound up with the doctrines of Ideas is directed not against Pythagoreans, but the various branches of the Academy.

[2] *Metaph.* i. 6, 987 b. 7, 27 sqq.; cf. c. 9, beginning; xiii. 6, 1080 b, 16, c. 8, 1083 b, 8; xiv. 3, 1090 a, 20; *Phys.* iii. 4, 203 a, 3.

[3] In his edition of Hierocles, p. 20; *Fragm. Philos.* i. 413.

[4] *γέγραπται δὲ τῷ Πυθαγόρᾳ συγγράμματα τρία, παιδευτικὸν, πολιτικὸν, φυσικόν· τὸ δὲ φερόμενον ὡς Πυθαγόρου Λύσιδός ἐστι τοῦ Ταραντίνου.*

[5] As is certainly true of the well-known Pythagorean oath, v. 47 sq., which is generally considered as the property of the whole school, and, according to Iambl. *Theol. Arithm.* p. 20, is also to be met with in Empedocles (cf. Ast. *in Theol. Arithm.* and Mullach, notes on the golden poem, *loc. cit.*);

In regard to the remaining fragments, with few and unimportant exceptions, those which bear the names of well-known ancient Pythagoreans, such as Theano, Brontinus, Clinias, and Ecphantus, are certainly spurious. Most of them, however, are attributed to men of whom we either know nothing at all, or are ignorant when they lived. But as these fragments precisely resemble the rest in their content and exposition, we cannot doubt that they too claim to be of ancient Pythagorean origin. If they have no such origin, they must be considered deliberate forgeries, and not the genuine productions of a later Pythagoreanism approximating to the Platonic or Peripatetic philosophy. Moreover, the later Pythagoreanism which professes to be older than Neo-Pythagoreanism, has been altogether derived from these fragments, whereas all historical evidence agrees that the latest ramifications of the ancient Pythagorean School do not extend beyond the time of Aristotle. In truth, few or no elements of ancient Pythagoreanism are to be found in these numerous passages. Of these fragments and of the other vestiges of Pythagoreanism, so much as claims our attention from a philosophic point of view will be treated further on; we shall also discuss more at length the fragments we possess of the writings of certain philosophers whose relation to Pythagoras is not quite ascertained, such as Hippasus and Alcmæon.

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the same may probably hold good of v. 54. Consequently the quotation which Chrysippus makes from it, ap. A. Gell, vi. 2, proves nothing in regard to the age of the poem.

II. *PYTHAGORAS AND THE PYTHAGOREANS.*

Considering the number of traditions in existence respecting the founder of the Pythagorean school, the amount which can be relied on with any historical probability, when separated from the labyrinth of uncertain legends and later conjectures, is very small. We know that his father's name was Mnesarchus,[1] that Samos was his home and doubtless also his birthplace;[2]

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[1] Heracleitus, *ap. Diog.* viii. 6, Herodotus, iv. 95, and most of the other authorities. The name, Marmacus, given to him, according to Diog. viii. 1, by several writers, is perhaps founded merely on a scriptural error. Justin (xx. 4) calls him Demaratus, which is most likely also founded on some confusion or another.

[2] He is called a Samian by Hermippus (ap. Diog. viii. 1), by Hippobotus (Clem. *Strom.* i. 300, D), and by later writers almost without exception; Iamblichus (*V. P.* 4) mentions the statement that both his parents were descended from Ancæus, the founder of Samos; Apollonius, however (ap. Porph. *V. P.* 2), asserts this of his mother only. His Samian origin may be reconciled with the statements that he was a Tyrrhenian (vide Aristoxenus, Aristarchus, and Theopompus, ap. Clement. and Diogenem, *loc. cit.*; the similar passage in Theodoret, *Gr. aff. cur.* i. 24, 8, 7, together with Eus. *Pr. Ev.* x. 4, 13, is taken from that of Clemens; Diodor. *Fragm.* p. 554 Wess.) or a Phliasian (anonymous writer cited by Porph. *Pyth.* p. 5); if we suppose with O. Müller (*Geschichte der hell. St. u. St.* ii. b. 393) and Krische (*De Societ. a Pyth. conditæ scopo politico*, p. 3. etc.) that he came of a Tyrrheno-Pelasgic family, which had emigrated from Phlius to Samos. Pausanias (ii. 13, 1 sq.) actually relates as a Phlian legend that Hippasus, the great grandfather of Pythagoras, went from Phlius to Samos, and this is confirmed by Diog. L. viii. 1; in the fabulous tale of Ant. Diogenes, ap. Porph. *V. P.* 10, and in the better attested statement, *ibid.* 2, Mnesarchus is spoken of as a Tyrrhenian who had emigrated from his home. On the other hand, the statement in Plut. *Qu. Conv.* viii. 7, 2, that he was an Etruscan by birth is evidently a mistake, as also the opinion (ap. Porph. 5) that he originally came from Metapontum; Neanthes (instead of which our text of Porphyry, as we have seen, gives Cleanthes) ap. Porph. *V. P.* 1, makes Mnesarchus a Tyrian, who, on account of his services at Samos, received the right of citizenship there (Clemens and Theod. *loc. cit.* say incorrectly that he asserted Pythagoras himself to have been a Tyrian or a Syrian); but the statement is of little consequence, since it may be explained partly by a

but the time of his birth, death, and removal to Italy can only be approximately determined;[1] the statements

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confusion of *Τύριος* and *Τυῤῥηνὸς*, and partly from an attempt to account for the supposed oriental wisdom of the philosopher by his extraction. Probably in reference to this story, Iamblichus, *V. P.* 7, represents him as having been born during a journey of his parents to Sidon. The well-known story of Heracleides of Pontus, and of Sosicrates (ap. Cic. *Tusc.* v. 3, 8; Diog. i. 12; viii. 8; cf. Nicom. *Arithm.* sub. init.) about Pythagoras' conversation with the tyrant Leo of Phlius, in which he declared himself to be a *φιλόσοφος*, points to a connection with Phlius.

[1] The calculations of Dodwell and Bentley, the former of whom places his birth in Ol. 52, 3, and the latter in Ol. 43, 4, have been sufficiently refuted by Krische, *loc. cit.* p. 1, and Brandis, i. 422. The usual opinion now is that Pythagoras was born about the 49th Olympiad, that he came to Italy about the 59th or 60th, and died in the 69th. This is no doubt approximately correct, and greater exactitude cannot be attained; even the statements of the ancients are probably based only upon uncertain estimates, and not upon distinct chronological traditions. According to Cicero, *Rep.* ii. 15; cf. *Tusc.* i. 16, 38; iv. 1, 2; A. Gell. xvii. 21; Iambl. *V. P.* 35, Pythagoras came to Italy in the 62nd Olympiad, the fourth year of Tarquinius Superbus (532 B.C.), whereas Liv. i. 18, represents him as teaching there under Servius Tullius. Others, doubtless after Apollodorus, name the 62nd Ol. as the period in which he flourished (so Clem. *Strom.* i. 302 B, 332 A; Tatian, *Con. Græc.* c. 41; Cyrill. *in Jul.* i. 13 A; Euseb. *Chron. Arm.* T. ii. 201, vide Krische, p. 11). Diodorus (*loc. cit.*) even gives Ol. 61, 4, and Diogenes, viii. 45, Ol. 60. Both statements are probably founded on the assertion of Aristoxenus, who, following Porphyry 9, makes Pythagoras emigrate to Italy in his fortieth year, to escape from the tyranny of Polycrates. According to the date assigned to the commencement of the tyranny, the former or the latter date was fixed for Pythagoras (cf. Rohde, *Quellen des Iambl.* in his *Biogr. des Pyth.*; *Rhein. Mus.* xxvi. 568 sq.; Diels, *Ub. Apollodor's Chronika, ibid.* xxxi. 25 sq.). If the fortieth year of the philosopher's life be placed in Ol. 62, 1, we get Ol. 52, 1 as the date of his birth (572 B.C.); this would agree with the text of Eusebius, *Chron.*, which states that he died in the Ol. 40, 4 (497 B.C.), if we suppose him to have attained his 75th year (Anon. ap. Syncell. *Chron.* 247 c.). The traditions as to the length of his life vary exceedingly. Heracleides Lembus (ap. Diog. viii. 44) gives it as 80 years (which may have been derived from Diog. viii. 10); but most writers, following Diog. 44. have 90: Tzetz. *Chil.* xi. 93, and Sync. *loc. cit.*, say 99; Iamblichus (265) nearly 100; the biographer, ap. Phot. (*Cod.* 249, p. 438 b, Bekk.) 104; a Pseudo-Pythagorean, ap. Galen. (*Rem. Parab.* T. xiv. 567 K) 117, or more. If Pythagoras (as asserted by Iambl. 265) was at the head of his school for 39 years, and if his arrival in Italy occurred in 532 B.C., his death must have occurred in 493 B.C., and supposing him to have been 56

of the ancients as to his teachers seem almost entirely

(Iambl. 19) when he came into Italy, we should get 588 as the year of his birth. If, on the other hand (Iambl. 255), the attack on his school, which he is said not to have survived very long (vide *infra* p. 282, 1, third edition), be brought into direct connection with the destruction of Sybaris (510 B.C.), his death must have taken place in the sixth century. Lastly, Antilochus in Clem. *Strom.* i. 309 B, places the ἡλικία of Pythagoras (not his birth as Brandis, i. 424, says) 312 years earlier than the death of Epicurus, which, according to Diog. x. 15, happened in Ol. 127, 2; this would bring us to Ol. 49, 2, and the philosopher's birth must be put back to the beginning of the sixth century. We are taken still farther back by Pliny, who, according to the best attested reading of *Hist. Nat.* ii. 8, 37, assigns an astronomical discovery of Pythagoras to the 42nd Olympiad, or the 142nd year of the City; while, on the contrary, his abbreviator, Solinus, c. 17, says that Pythagoras first came to Italy during the consulate of Brutus, therefore A. U. C. 244–5, or 510 B.C. Röth (p. 287 sq.) combines with this last statement the assertion of Iambl. (*V. P.* 11, 19) that Pythagoras left Samos at the age of eighteen, received instruction from Pherecydes, Thales, and Anaximander; was 22 years in Egypt, and after its conquest by Cambyses (525 B.C.), 12 more in Babylon; and at the age of 56 again returned to Samos. Consequently he places his birth in 569 B.C.; his return to Samos in 513 B.C.; his arrival in Italy in 510; and his death in 470. But these statements are entirely destitute of evidence. Röth supposes that Iamblichus may have borrowed them from Apollonius (of Tyana), but even if this were true, we must still ask where Apollonius obtained them? There is no mention even of the so-called Crotonian memoirs on which Apollonius (ap. Iambl. 262) founds his narrative of the expulsion of the Pythagoreans from Croton. This narrative, however, cannot be reconciled with Röth's calculation, as it makes the residence of Pythagoras in Croton precede the destruction of Sybaris (Iambl. 255). Now it is true that his death must be put back at least to 470 B.C., if, as Dicæarchus and others maintain (vide *infra*), the attack on the Crotonian Pythagoreans, from which Lysis and Archippus alone are said to have escaped, took place in the lifetime of Pythagoras; nay, in that case, we must even allow 18 or 20 years more; for the birth of Lysis, as we shall find, can scarcely have occurred before 470. The only inference from this, however, is that the statement must be discarded; that Dicæarchus does not here deserve the credit of trustworthiness which Porphyry (*V. P.* 56) accords to him; and that no thoughtful critic could regard this judgment of Porphyry's as decisive in favour of the narrative of Dicæarchus. Pythagoras cannot have lived to the year 470 B.C.: this is evident from the manner in which he is spoken of by Xenophanes and Heracleitus, both of whom are before that date (vide *infra*, p. 381, 1, third edition, 283, 3); their expressions certainly do not give us the impression of relating to a person still alive. More-destitute of any secure historic foundation,[1] and even his connection with Pherecydes, which has in its favour an old and respectable tradition,[2] is not quite beyond a doubt.[3] Of his distant journeyings, which

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over, none of our authorities, except Solinus, who is not to be depended upon, place the arrival of Pythagoras in Italy later than Ol. 62. For Iamblichus himself (that is to say, Apollonius) does not intend this (*V. P.* 19) when he says that he first came there twelve years after the conquest of Egypt by Cambyses (therefore after 425 B.C. Even Apollonius, ap. Iambl. 255, as already observed, makes him outlive by very little the destruction of Sybaris), but Iamblichus is too careless or too ignorant of chronological matters to remark the contradiction into which his narrative has fallen. It is clear, however, that none of our informants had at their command trustworthy and exact chronological details as to the life of Pythagoras. Perhaps, indeed, all their statements were inferred from a few notices, e.g. concerning his migration in the time of Polycrates, or the Pythagoreanism of Milo, the conqueror at the Traës. We must, therefore, leave it undecided whether and how long the philosopher survived the end of the sixth century.

[1] Diog. viii. 2, names Pherecydes and Hermodamas, a descendant of the Homerid Creophylus of Samos, and, according to Iambl. 11, himself called Creophylus. Neanthes (ap. Porph. 2, 11, 15) adds to these Anaximander, Iamblichus (9, 11, 184, 252) Thales. Instead of Thales, Apuleius (*Floril.* ii. 15, p. 61, Hild.) names Epimenides, with whom, according to Diog. viii. 3, Pythagoras was acquainted. The Scholiast of Plato, p. 420, Bekk. says that he first attended Pherecydes' instructions, then those of Hermodamas, afterwards those of Abaris, the Hyperborean (vide *infra*). Thus it is plain that as time went on, celebrated names continued to be added to the list. Abaris and Epimenides are, however, also called disciples of Pythagoras (Iambl. 135).

[2] Besides the text already quoted, Diog. i. 118 sq.; viii. 40 (after Aristoxenus), Andron, and Satyrus; the epitaph of which Duris, ap. Diog. i. 120, speaks; Cic. *Tusc.* i. 16, 38; *De Div.* i. 50, 112; Diodor. *Fragm.* p. 554; Ps. Alex. *in Metaph.* 828 a, 19, Fr. 800, 24 Bon. &c.

[3] For in the first place it was very natural that the thaumaturgist, Pythagoras, should have been represented as the pupil of an older contemporary of similar character, who likewise held the dogma of Transmigration; and secondly, the accounts on the subject are not agreed as to details. According to Diog. viii. 2, Pythagoras was brought to Pherecydes at Lesbos, and after Pherecydes' death, handed over to Hermodamas in Samos. Iambl. 9, 11, says that he was instructed by Pherecydes first in Samos, and then in Syros. Porphyry (15, 56) says, following Dicæarchus and others, that he tended his master, who was sick in Delos, and buried him before his

are said to have acquainted him with the wisdom and religious ceremonies of the Phenicians,[1] the Chaldæans,[2] the Persian Magi,[3] the Hindoos,[4] the Arabians,[5] the

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departure to Italy; on the other hand, Diodorus (*loc. cit.*), Diog. viii. 40, and Iambl. 184, 252, following Satyrus and his epitomiser, Heracleides, say that shortly before his own death he went from Italy to Delos for that purpose.

[1] According to Cleanthes (Neanthes), in Porphyry, *V. P.* 1, Pythagoras was brought as a boy to Tyre by his father, and there instructed by 'the Chaldæans.' Iambl. *V. P.* 14, says that when he left Samos on his great travels, he first went to Sidon, and there met with prophets, the descendants of the ancient Mochus (vide *supra*, p. 48, and *infra*, chapter on the Atomists, note 2), and other hierophants; that he visited Tyre, Biblus, Carmel, &c., and was initiated into all the mysteries of the country. Porphyry (*V. P.* 6) is more moderate; he merely states that Pythagoras is said to have gained his arithmetical knowledge from the Phœnicians.

[2] According to Neanthes, Pythagoras had, when a boy, been instructed by the Chaldæans (vide previous note). According to all other testimony, he first came to Babylon from Egypt, either of his own accord, or as the prisoner of Cambyses. This statement appears in its simplest form in Strabo, xiv. i. 16, p. 638: Πυθαγόραν ἱστοροῦσιν . . . . ἀπελθεῖν εἰς Αἴγυπτον καὶ Βαβυλῶνα φιλομαθείας χάριν. Clemens, *Strom.* 302 C, merely says: Χαλδαίων τε καὶ Μάγων τοῖς ἀρίστοις συνεγένετο; Eus. *Pr. Ev.* x. 4, 9 sq.; Antipho, ap. Diog. viii. 3; *Schol. Plat.* p. 420, Bekk. Porph. 6 say that he learned astronomy from the Chaldæans. In Justin xx. 4, he is said to have travelled to Babylon and Egypt, *ad perdiscendos siderum motus originemque mundi spectandam.* Apul. *Floril.* ii. 15, states that he was instructed by the Chaldæans in astronomy, astrology, and medicine. According to Diogenes in the book of Prodigies (ap. Porph. 11) he learned the interpretation of dreams from the Chaldæans and Hebrews (or from the Hebrews only?). In Iambl. *V. P.* 19; *Theol. Arithm.* p. 41, we are told that in the conquest of Egypt by Cambyses he was carried as a prisoner to Babylon, remained twelve years in that city, where in his intercourse with the Magi, he not only perfected himself in mathematics and music, but completely adopted their religious prescripts and practices. That Iamblichus is here following some older authority (Apollonius, no doubt), is shown by the statement of Apul. *Floril.* ii. 15. Many maintain that Pythagoras was taken prisoner by Cambyses in his Egyptian campaign, and was only set at liberty a long time after by Gillus the Crotonian; and that in consequence of this he had the benefit of the instructions of the Persian Magi, especially Zoroaster.

[3] Pythagoras must early have been brought into connection with the Magi, and especially with Zoroaster, if what Hippolytus says is true (*Refut. Hær.* i. 2, p. 12 D); cf. vi. 23: Διόδωρος δὲ ὁ Ἐρετριεὺς (a writer otherwise unknown) καὶ Ἀριστόξενος ὁ μουσικός φασι πρὸς

Ζαράταν τὸν Χαλδαῖον ἐληλυθέναι Πυθαγόραν; he imparted to Pythagoras his doctrine, which Hippolytus proceeds to describe, but in a very untrustworthy manner. This statement of Hippolytus, however, is hardly sufficient to prove that Aristoxenus asserted a personal acquaintance between Pythagoras and Zoroaster. He may, perhaps, have observed the similarity of the two doctrines, and hazarded the conjecture that Pythagoras was acquainted with Zoroaster; for there is no certainty at all that Hippolytus himself knew the work of Aristoxenus. What he says about the Zoroastrian doctrines which Pythagoras adopted cannot have been taken as it stands from Aristoxenus, because it presupposes the story about Pythagoras' prohibition of beans to be true, while, as we shall presently find, Aristoxenus expressly contradicts it. Besides, the evidence of Aristoxenus would merely prove that even in his time similarities had been discovered between the Pythagorean and the Zoroastrian doctrine, then well known in Greece (cf. Diog. Laërt. i. 8 sq.; Damasc. *De Princ.* 125, p. 384, and that these resemblances had been explained after the manner of the Greeks by the hypothesis of a personal relation between the two authors. Plutarch seems to have derived his shorter statement from the same source as Hippolytus; there is, therefore, all the less reason to doubt that here too, as in Hippolytus, Zaratas originally meant Zoroaster; supposing even that Plutarch himself, who (*De Is.* 46, p.369) makes Zoroaster to have lived 5000 years before the Trojan war, discriminated them. Our most ancient authority for this relationship is Alexander (Polyhistor), who, according to Clemens, *Strom.* i. 304 B, said in his work on the Pythagorean symbols: Ναζαράτῳ τῷ Ἀσσυρίῳ μαθητεῦσαι τὸν Πυθαγόραν. This Ναζάρατος is evidently Zoroaster; if, indeed, Ζαράτᾳ ought not to be substituted. That Pythagoras visited the Persian Magi we are likewise told in Cic. *Fin.* v. 29, 87; cf. *Tusc.* iv. 19, 44; Diog. viii. 3 (perhaps after Antipho); Eus. *Pr. Ev.* x. 4; Cyrill. *c. Jul.* iv. 133 D; *Schol. in Plat.* p. 420, Bekk.; Apul. (vide preceding note); Suidas, Πυθ. Valer. Max. viii. 7, 2, assert that he learned astronomy and astrology in Persia from the Magi. Antonius Diogenes relates, ap. Porphyry, *V. P.* 12 (ἐν τοῖς ὑπὲρ Θούλην ἀπίστοις, the well-known book of fables described by Phot. *Cod.* 166, and treated not only by Porphyry, but also by Röth, ii. a, 343, as a work of the highest authenticity), that he met Ζάβρατος in Babylon, was purified by him from the sins of his previous life, and instructed in the abstinences necessary to piety, and in the nature and reasons of things.

[4] Clem. *Strom.* i. 304 B: ἀκηκοέναι τε πρὸς τούτοις Γαλατῶν καὶ Βραχμάνων τὸν Πυθαγόραν βούλεται (namely, Alexander in the work quoted in the previous note); after him, Eus. *Pr. Ev.* x. 4, 10; Apul. *Foril.* ii. 15: of the Brahmins whom he visited, he learned *quæ mentium documenta corporumque exercitamenta, quot partes animi, quot vices vitæ, quæ Diis manibus pro merito sui cuique tormenta vel præmia.* Philostr. *V. Apoll.* viii. 7, 44, says that the wisdom of Pythagoras was derived from the Egyptian γυμνῆται and the Indian sages

[5] Diog. in Porphyry, 11.

Jews,[1] the Thracians,[2] the Druids of Gaul,[3] but above all with the mysteries of the Egyptians[1]—even the journey to Egypt, though this is comparatively the best attested and finds supporters[2] among quite recent writers—cannot be satisfactorily established. The most ancient evidence for this journey, that of Isocrates, is more than a hundred and fifty years later than the event to which it refers, and moreover is contained, not in a historical work, but in a rhetorical oration which itself makes no pretension to historical credibility.[1] Such testimony has obviously no weight at all; and even if Isocrates did not himself originate the idea that Pythagoras had been in Egypt, there would still remain the doubt whether the source from which he took it was grounded on historical tradition. This, however, is not only beyond the reach of proof, but is contrary to all probability. Herodotus, it is true, remarks on the analogy of one Pythagorean usage with a custom of the Egyptians;[2] he also says that the

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[1] That Pythagoras borrowed many of his doctrines from the Jews is asserted by Aristobulus in Eus. *Pr. Ev.* xiii. 12, 1, 3 (ix. 6, 3), and the same is repeated by Joseph. *Con. Ap.* i. 22, and Clem. *Strom.* v. 560 A (who thinks that the acquaintance of Plato and Pythagoras with the Mosaic writings is shown in their doctrines). Cyrill. *c. Jul.* i. 29 D, *Jos.* appeals in support of this to Hermippus, who, in his work on Pythagoras, says: *ταῦτα δ' ἔπραττε καὶ ἔλεγε τὰς Ἰουδαίων καὶ Θρακῶν δόξας μιμούμενος καὶ μεταφέρων εἰς ἑαυτόν.* He had also said the same, as Origen, *c. Cels.* i. 13, relates with the word *λέγεται, ἐν τῷ πρώτῳ περὶ νομοθετῶν.* If even these authors derived their statements from Aristobulus, it is not certain that Hermippus really expressed himself thus; but supposing he did so, it would only prove that this Alexandrian sage, of the early part of the second century before Christ, had found the assertion among the Alexandrian Jews, and believed it; or else that he had himself observed some similarities between the Pythagorean and Jewish doctrines, and had inferred from them that Pythagoras was acquainted with the customs and doctrines of the Jews.

[2] Hermippus, *ap. Jos.*, vide preceding note. This statement was no doubt based upon the likeness of the Pythagorean mysteries to those of the Orphics, and especially in their common doctrine of Transmigration. In consequence of this likeness, Pythagoras was represented as the pupil of the Thracians; he had, it is said, received his consecration from Aglaophamus in Libethra; as the pseudo-Pythagoras himself (not Telauges as Röth ii. a, 357, b, 77, supposes) says in the fragment of a *ἱερὸς λόγος* in Iambl. *V. P.* 146, cf. 151, and following that authority, Procl. *in Tim.* 289 B; Plat. *Theol.* i. 5, p. 13. Conversely, in the legend of Zalmoxis (ap. Herod. iv. 95, *and* others after him, e.g. Ant. Diog. ap. Phot. *Cod.* 166, p. 110 a; Strabo, vii. 3, 5; xvi. 2, 39, p. 297, 762; Hippolyt. vide next note), the doctrine of immortality of the Thracian Getæ is derived *from* Pythagoras.

[3] Surprising as this sounds, it is undeniably asserted by *Alexander* in the passage quoted p. 329, 4; and Röth (ii. a, 346) is entirely on a wrong track when he discovers in it a misunderstanding of the statement that Pythagoras met in Babylon with Indians and Calatians (an Indian race mentioned in Herod. iii. 38, 97, who, being of a dark colour, he calls also Ethiopians, c. 94, 101). The idea probably arose in this way. The Pythagorean doctrine of Transmigration was found, or supposed to be found (vide *supra*, p. 73, 1), among the Gauls; as every such similarity was thought to be based upon a relation of teacher *and* taught, either Pythagoras was made a disciple of the Gauls, as by Alexander, or the Druids *were* made disciples of the Pythagorean philosophy, as by Diodorus and Ammian (vide *supra*, 73, 1), *into* which, according to Hippolyt. *Refut. hær.* i. 2, 9 E; *ibid.* c. 25, they were regularly initiated *by* Zamolxis. Iambl. (151) says also that Pythagoras was instructed by the Celts, and even by the *Iberians.*

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[1] The first known author who speaks of Pythagoras being in Egypt is Isocrates, *Bus.* 11: ὃς (Πυθ.) ἀφικόμενος εἰς Αἴγυπτον καὶ μαθητὴς ἐκείνων γενόμενος τήν τ' ἄλλην φιλοσοφίαν πρῶτος εἰς τοὺς Ἕλληνας ἐκόμισε, καὶ τὰ περὶ τὰς θυσίας καὶ τὰς ἁγιστείας τὰς ἐν τοῖς ἱεροῖς ἐπιφανέστερον τῶν ἄλλων ἐσπούδασεν. The next testimony, Cic. *Fin.* v. 29, 87, merely says *Ægyptum lustravit*; similarly Strabo (vide *supra*, 328, 1); Justin, *Hist.* xx. 4; *Schol. in Plato*, p. 420, *Bekk.*; Diodorus, i. 96, 98, learned much more from the statements of the Egyptian priests, said to be taken from their sacred writings, vide *supra*, p. 27, 1. Plut. *Qu. Conv.* viii. 8, 2, 1, makes out that Pythagoras was a long while in Egypt, and adopted the precepts concerning the ἱερατικαὶ ἁγιστεῖαι, such as the prohibition of beans and fish. The same authority, *De Is.* 10, p. 354, derives the Pythagorean symbolism from Egypt; Ps.-Justin (*Cohort.* 19) says the Pythagorean doctrine of the Monad as the first principle came from there. According to Apul. *Floril.* ii. 15, Pythagoras learned from the Egyptian priests *cærimoniarum potentias, numerorum vices, geometriæ formulas*; according to Valer. Max. viii. 7, 2, he found in the ancient books of the priests, when he had learned the Egyptian writing, *innumerabilium sæculorum observationes*; Antipho (Diog. viii. 3 and Porph. *V. P.* 7 sq.) relates how Polycrates introduced him to Amasis, and Amasis to the Egyptian priests; and how he thus after many difficulties, which his perseverance at length overcame, gained admittance to the Egyptian mysteries and holy rites. He says also that he learned the Egyptian language. From this author, Clemens, *Strom.* i. 302 c, and Theodoret, *Gr. aff. cur.* i. 15, p. 6, no doubt derive their statement that he was circumcised in Egypt. Anton. Diogenes (ap. Porph. *V. P.* 11) says that he learned the wisdom of the Egyptian priests, especially their religious doctrine, the Egyptian language and the three kinds of Egyptian writing. Iamblichus, *V. P.* 12 sqq. (cf. p. 325, note), gives a circumstantial account of his wonderful voyage from Mount Carmel to Egypt (whither, according to *Theol. Arithm.* 41, he had fled from the tyranny of Polycrates), and goes on to tell of his 22 years' intercourse with the priests and prophets, in which he learned all that was worth knowing, visited all the temples, gained access to all the mysteries, and devoted himself to astronomy, geometry, and religious exercises. The king in whose reign Pythagoras came to Egypt is called by Pliny (*Hist. Nat.* xxxvi. 9, 71) Psemetnepserphres (for which the manuscripts also give Semetnepsertes and other forms); the priest who instructed him is said by Plutarch, *De Is.* 10, to have been Oinupheus of Heliopolis. Clem. *Strom*, i. 303 C, names Sonches. Plutarch (*De Is.* 26; *Solon*, 10) makes Sonches the instructor of Solon.

[2] E.g. independently of Röth, Chaignet (*Pythagore*, i. 43 sqq.; ii. 353), who is very inaccurate when

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he says (i. 46) that I declare it certain that Pythagoras never went to Egypt. I say it is undemonstrable that he was there; I never said it was demonstrable that he was *not* there.

[1] The Busiris of Isocrates is one of those works in which the Greek rhetors, after the time of the Sophists, sought to surpass one another in panegyrics on evil or worthless persons and things, and in accusations against men universally admired. The Rhetor Polycrates had written an apology for Busiris. Isocrates shows him how he should have handled his theme. He explains his points of view very candidly, c. 12. The adversary of Busiris, he says, has ascribed wholly incredible things to him, such as the diverting of the Nile from its course, and the devouring of strangers. It is true that Isocrates cannot prove what he affirms of him, but he certainly does not attribute to him impossible deeds, nor acts of bestial savagery: ἔπειτ' εἰ καὶ τυγχάνομεν ἀμφότεροι ψευδῆ λέγοντες, ἀλλ' οὖν ἐγὼ μὲν κέχρημαι τούτοις τοῖς λόγοις, οἷς περ χρὴ τοὺς ἐπαινοῦντας, σὺ δ' οἷς προσήκει τοὺς λοιδοροῦντας. It is evident that writings which announce themselves as rhetorical inventions cannot be of the smallest value; and if we cannot prove from this work that Busiris was the author of the whole Egyptian culture, neither can we accept it as historical evidence for the presence of Pythagoras in Egypt, and his connection with the Egyptian priests.

[2] ii. 81. The Egyptian priests wear linen trousers under their woollen garments, in which they were not allowed to enter the temple, or to be buried. ὁμολογέουσι δὲ ταῦτα τοῖσι Ὀρφικοῖσι καλεομένοισι καὶ Βακχικοῖσι, ἐοῦσι δὲ Αἰγυπτίοισι, καὶ

belief in Metempsychosis came from Egypt into Greece;[1] but he never hints that Pythagoras brought it thither, seeming rather to assume that it had been transmitted to the Greeks[2] before the time of that philosopher. As to the presence of Pythagoras in Egypt, though there was every opportunity for mentioning it, he preserves so strict a silence that we can only suppose he knew nothing of it.[3] Nor does Aristoxenus seem to have been aware of it.[4] Thus there is an entire dearth of all trustworthy evidence respecting the supposed

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Πυθαγορείοισι. That is, 'they agree in this respect with the so-called Orphics and Bacchics, who, however, are in truth Egyptians, and with the Pythagoreans;' not, as Röth (ii. a, 381) and (in spite of the previous remark) Chaignet (i. 45) translate it: 'They agree in this with the usages of the Orphic and Bacchic rites of consecration, which, however, are Egyptian and Pythagorean.'

[1] ii. 123. The Egyptians first taught Immortality and Transmigration: *τούτῳ τῷ λόγῳ εἰσὶ οἳ Ἑλλήνων ἐχρήσαντο, οἱ μὲν πρότερον, οἱ δὲ ὕστερον, ὡς ἰδίῳ ἑωυτῶν ἐόντι· τῶν ἐγὼ εἰδὼς τὰ οὐνόματα οὐ γράφω.*

[2] Though it is probable that Herodotus, in the passage just quoted, when speaking of the later philosophers who adopted the doctrine of Transmigration, was especially referring to Pythagoras, he does not necessarily mean that Pythagoras himself acquired it in Egypt. Herodotus names Melampus as having imported the Egyptian Dionysiac cultus into Greece (vide *supra*, 71, 4); it would seem, therefore, that Melampus is primarily alluded to among the 'ancients' who introduced the doctrine of Transmigration into the Orphic Dionysiac mysteries. In that case Pythagoras would not have required to go to Egypt, in order to become acquainted with this doctrine.

[3] For Röth's explanation (ii. b, 74) that Herodotus purposely avoided mentioning Pythagoras from his antipathy to the Crotoniates, who were hostile to the Thurians, is not only very far-fetched, but demonstrably false. Herod. does mention him in another place (iv. 95), and with the honourable addition: *Ἑλλήνων οὐ τῷ ἀσθενεστάτῳ σοφιστῇ Πυθαγόρῃ*; and in ii. 123 (previous note) he passes over his and other names, not from aversion, but forbearance. If he is silent as to his connection with Egypt, the most natural reason for his silence is that he knew nothing of any such connection. Also in ii. 81 (vide *supra*, p. 332, 2), he would doubtless have expressed himself otherwise, if he had derived the Pythagoreans from Egypt in the same manner as the Orphics.

[4] None of our authorities, at any rate, who speak of Pythagoras' Egyptian journeys, refer to Aristoxenus.

journeys of Pythagoras in the East; our authorities become more copious as we recede from the philosopher's own time, and more meagre as we approach it; before the beginning of the fourth century they entirely fail. Each later writer has more to tell than his predecessor; and in proportion as the acquaintance of the Greeks with the Oriental civilised nations increases, the extent of the journeys which brought the Samian philosopher to be instructed by them likewise increases. This is the way that legends are formed and not historical tradition. We cannot, indeed, pronounce it impossible that Pythagoras should have gone to Egypt or Phœnicia, or even to Babylon, but it is on that account all the more indemonstrable. The whole character of the narratives of his journeys strengthens the supposition that, as they now stand, they can have been derived from no historical reminiscence; that it was not the definite knowledge of his intercourse with foreign nations which gave rise to the theories as to the origin of his doctrine; but, conversely, the presupposition of the foreign source of his doctrine which occasioned the stories of his intercourse with the barbarians. There is quite enough to account for such a presupposition, even if it were founded on no actual contemporary tradition, in the syncretism of later times, in the false pragmatism[1] which could only explain the similarity of Pythagorean doctrines and usages with those of the East by the theory of personal relations between Pythagoras and the Orientals, and in the tendency *to* panegyric of the Pythagorean legend which loved to concentrate the wisdom of the whole human race in its hero.[1] The statement that Pythagoras visited Crete and Sparta, partly to become acquainted with the laws of those countries, partly that he might be initiated into the mysteries of the Idæan Zeus, stands on no better foundation.[2] The thing is in itself conceivable, but the evidence is too uncertain, and the probability of any historical tradition as to these details too scanty to allow of our placing any trust in the assertion. So, too, the theory that the philosopher owed his wisdom to Orphic teachers[3] and writings, even though it may not be wholly wrong as to the fact, is doubtless based, as it stands, not on any historical reminiscence, but on the presuppositions of a period in which an Orphic theosophy and literature had formed itself to some extent under Pythagorean and Neo-Pythagorean influences. The truth is, that we possess no document which deserves to be considered a historical tradition concerning the education of Pythagoras and the resources at his command. Whether it be possible to supply this want by inferences from the internal nature of the Pythagorean doctrine, we shall enquire later on.

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[1] There is no English equivalent for the German word *Pragmatismus*, which may perhaps be explained as the tendency to explain the history of thought by imaginary combinations of fact.—*Note by Translator.*

The first luminous point in the history of this philosopher is his emigration to Magna Græcia, the date of which we cannot precisely fix,[1] nor can we do more than conjecture the reasons which led to it.[2] His activity, however, does not seem to have begun in Italy. The ordinary accounts, it is true, do not leave space for a long period of activity in Samos. Other texts, however, maintain that he at first laboured there successfully[3] for some time, and if this assertion, considering the fables connected with it and the untrustworthiness of its evidence, may hardly seem deserving of notice, yet the manner in which Pythagoras is mentioned by Heracleitus and Herodotus would appear to bear it out.[4] Heracleitus soon after the death of this philosopher speaks of his various knowledge and of his (in Heracleitus's opinion erroneous) wisdom, as of a thing well known in Ionia.[5] Now, it is *not* likely that the report of it had first reached Ionia from Italy. For, according to other testimony (vide *infra*), the spread of Italian Pythagoreanism was brought about by the dispersion of the Pythagoreans long after the death of the master. Again, the well-known and often quoted narrative of Zalmoxis[1] presupposes that Pythagoras had already played the same part in his own country that he afterwards played in Magna Græcia. In this story a Gætic divinity takes the form of a man and communicates with Pythagoras. The motive of that fiction evidently is to explain the presumed similarity of the Gætic belief in immortality with the Pythagorean doctrine (vide *supra*, p. 73, 1); yet the story could never have been invented if the name of the philosopher had been unknown to the Greeks on the Hellespont, from whom Herodotus received it, and if in their opinion his activity had first commenced in Italy. Whether among his countrymen he found less appreciation than he had hoped for, or whether other reasons, such as the tyranny of Polycrates or the fear of the Persian invasion, had disgusted him with his native city, in any case he left it and took up his abode in Crotona, a city with which he may possibly have had some personal connections, and which may well have commended itself to him on account of the far-famed salubrity of its site and the vigorous activity of its inhabitants.[2] Here he found the proper soil for his endeavours, and the school he established was until its dispersion so exclusively associated with lower Italy, that it is often described as the Italian school.[1]

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[1] Because Pythagoras could scarcely have attained that 'polymathy,' for which he is extolled by Heracleitus (vide *infra*, p. 336, 4), otherwise than by travels (Chaignet, i. 40; Schuster, *Heracl.* 372), it does not at all follow that he went to Egypt, or visited non-Hellenic countries. Moreover, Heracleitus rather derives his learning from writings which he studied; it is possible, however, that these may have been collected by him previously on his journeys.

[2] Justin. xx. 4; Valer. Max. viii. 7, ext. 2; Diog. viii. 3 (Epimenides); Iambl. 25; Porph. 17, cf. p. 363, 2.

[3] Vide *supra*, p. 330, 2.

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[1] Vide *supra*, p. 324, 2.

[2] The statements of the ancients are probably mere arbitrary conjectures. Most of them assert with Aristoxenus (ap. Porph. 9) that the tyranny of Polycrates occasioned his migration (Strabo, xiv. 1. 16, p. 638; Diog. viii. 3; Hippolyt. *Refut.* i. 2, sub init.; Porph. 16; Themist. *Or.* xxiii. 285 b; Plut. *Plac.* i. 3, 24; Ovid. *Metam.* xv. 60, etc.), and that this assertion contradicts the uncertain story of Polycrates's commendatory letters to Amasis is no argument against it. But it cannot be considered as proved, since the combination was perfectly obvious. Others (Iambl. 20, 28) say that he emigrated because the Samians had too little taste for philosophy. On the other hand, Iambl. 28 says he did so in order to avoid the political activity, which the admiration of his fellow-citizens would have forced upon him.

[3] Antipho. ap. Porph. 9; Iambl. 20 sqq., 26 sqq.

[4] As Ritter pertinently remarks, *Pyth. Phil.* 31. What Brandis says to the contrary does not appear to me conclusive.

[5] Fr. 22, ap. Diog. viii. *6*: Πυθαγόρης Μνησάρχου ἱστορίην ἤσκησεν ἀνθρώπων μάλιστα πάντων, καὶ ἐκλεξάμενος ταύτας τὰς συγγραφὰς ἐποίησεν ἑωυτοῦ σοφίην, πολυμαθηΐην, κακοτεχνίην. (Cf. *ibid.* ix. 1.) The words ἐκλεξ . . . συγγραφὰς, which I cannot think inserted by the narrator, must refer to writings previously mentioned by Heracleitus. Cf. p. 227, 2; 2nd edit.

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[1] Herod. iv. 95.

[2] According to a statement (ap. Porph. 2), he had some previous connection with Crotona, having travelled thither as a boy with his father; but this is hardly more historical than the story mentioned by Apuleius, *Floril.* ii. 15, that Gillus, the Crotoniate (the Tarentine of that name mentioned in Herod. iii. 138), liberated him from his Persian imprisonment. According to Iambl. 33, 36, 142, Pythagoras visited many other Italian and Sicilian towns besides Crotona, especially Sybaris. That he went first to Sybaris, and thence to Crotona, however (vide Röth, ii.

But this portion of his life is still so much obscured by fabulous legends that it is hard to discover anything with a historical foundation in the mass of pure invention. If we may believe our informants, even the person of Pythagoras was surrounded with miraculous splendour. A favourite, and even a reputed son, of Apollo,[2] he is said to have been revered by his followers as a superior being,[3] and to have given proof of this his higher nature by prophecies and miracles of all kinds.[4]

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a, 421), is nowhere stated. Röth deduces from the words of Apollonius, ap. Iambl. 255, on which he puts an entirely wrong interpretation, and from Jul. Firmic. *Astron.* p. 9. (*Crotonam et Sybarim exul incoluit*), that after the destruction of Sybaris, Pythagoras betook himself to the estates which the Sybarites had given him; that, however, and everything else that he says about this country life, is pure imagination.

[1] Aristot. *Metaph.* i. 5, 987 a, 9. c. 6, sub. init.; c. 7, 988 a, 25; *De Cælo*, ii. 13, 293 a, 20; *Meteor.* i. 6, 342 b. 30; cf. Sextus, *Math.* x. 284; Hippolyt. *Refut.* i. 2; Plut. *Plac.* i. 3, 24.

[2] Porph. 2, appeals in support of this to Apollonius, Iambl. 5 sqq., to Epimenides, Eudoxus, and Xenocrates; but the first of these three names can only be introduced here through a mere blunder. For the well-known Cretan mentioned by Porph. 29, and Iambl. 135, 222, as a disciple of Pythagoras, and by others, vide p. 327, 1, as his teacher, can scarcely have been alive at the date of Pythagoras's birth; the other two names must likewise be considered doubtful. Xenocrates (as I have already observed in Part ii. a, 875, third edition) may perhaps have mentioned the statement as a report, but he cannot himself have adopted it.

[3] Porph. 20; Iambl. 30, 255. After Apollonius and Nicomachus; Diodor. *Fragm.* p. 554; Aristotle, ap. Iambl. 31, 144, quotes as a Pythagorean classification: *τοῦ λογικοῦ ζῴου τὸ μέν ἐστι θεὸς, τὸ δ' ἄνθρωπος, τὸ δ' οἷον Πυθαγόρας*; and Ælian. ii. 26, attributes to him the often repeated statement (also in Diog. viii. 11, and Porph. 28) that Pythagoras was called the Hyperborean Apollo. Cf. the following note.

[4] According to Ælian, *loc. cit.* cf. iv. 17, Aristotle had already related that Pythagoras had been simultaneously seen in Crotona and Metapontum, that he had a golden thigh, and had been spoken to by a river god. This statement, how-

He alone among mortals understood the harmony of the spheres;[1] and Hermes, whose son he was in a prior state of existence, had allowed him to retain the remembrance of his whole past amidst the various phases

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ever, has such a suspicious sound, that one might be tempted to conjecture an error in the words, *κἀκεῖνα δὲ προσεπιλέγει ὁ τοῦ Νικομάχου*, with which Ælian introduces it, and to suppose that Nicomachus, the celebrated Neo-Pythagorean, and not Aristotle, was Ælian's authority; had not Apollon. *Mirabil.* c. 6, likewise quoted the same thing from Aristotle. It cannot possibly have been Aristotle himself, however, who stated these things. He must have mentioned them merely as Pythagorean legends, and then himself have been taken by later writers as the authority for them. This, indeed, is possible, and therefore these statements can furnish no decisive proof of the spuriousness of the Aristotelian treatise, *περὶ τῶν Πυθαγορείων*, which they naturally recall to us. The same miracles are related by Plutarch, *Numa*, c. 8; Diog. viii. 11; Porph. 28 sqq.; Iambl. 90 sqq.; 134, 140 sq. (the two latter after Nicomachus; cf. Rohde, *Rh. Mus.* xxvii. 44). According to Plutarch he showed his golden thigh to the assembly at Olympia: according to Porphyry and Iamblichus, to the Hyperborean priest of Apollo Abaris. For further particulars, vide Herod. iv. 36 (cf. also Krische, *De Societ. a Pyth. cond.* 37), who refers the legends of Abaris, told by later writers, with some probability, to Heracleides Ponticus. Many other miracles, often of the most extravagant description, such as the taming of wild beasts by a word, foretelling of the future, and so forth, are to be found in Plutarch, *loc. cit.*; Apul. *De Magia*, 31; Porph. 23 sq.; Iambl. 36, 60 sqq., 142, who unfortunately, however, have not named the 'trustworthy ancient writers' to whom they owe their information; cf. also Hippol. *Refut.* i. 2, p. 10. It is clear from the statement of Porphyry, ap. Eus. *Pr. Ev.* x. 3, 4, that even in the fourth century there were stories current in proof of Pythagoras's supernatural knowledge of the future. Andron is said to have spoken in his Τρίπους of the prophecies of Pythagoras, and especially of an earthquake which he foretold from the water of a stream three days before it happened. Theopompus then transferred these stories to Pherecydes. The verses of Empedocles, ap. Porph. 30, and Iambl. 67, relate things much less wonderful. They do not imply supernatural knowledge, for the ancients (according to Diogenes, viii. 54) were not agreed as to whether the verse referred to Pythagoras or to Parmenides. For the rest it is quite credible that during the lifetime of Pythagoras, and immediately after his death, rumour may have asserted much that was miraculous about him, as was subsequently the case with Empedocles.

[1] Porph. 30; Iambl. 65; Simpl. *in Arist. De Cœlo*, 208, b, 43, 211 a, 16; *Schol. in Arist.* 496 b, 1.

of his existence.[1] There is mention even of a descent into Hades.[2] His doctrines are said to have been imparted to him in the name of his divine protector by the mouth of the Delphic priestess Themistoclea.[3] It cannot, therefore, be wondered at that on his first appearance in Crotona[4] he attracted much attention,[1] and soon acquired the highest renown throughout Italy.[2] Disciples, both men and women,[3] flocked to him, not only from the Greek colonies, but from the whole of Italy;[4] the most celebrated legislators of

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[1] Diog. viii. 4 sq. after Heracleides (Pont.); Porph. 26, 45; Iambl. 63; Horat. *Carm.* i. 28. 9; Ovid. *Metam.* xv. 160; Lucian, *Dial. Mort.* 20, 3, et pass. Tertull. *De. An.* 28, 31. According to A. Gellius, iv. 11, Clearchus and Dicæarchus, the disciples of Aristotle, asserted that Pythagoras maintained that he had formerly existed as Euphorbus, Pyrander and others; but the verses of Xenophanes, ap. Diog. viii. 36, say nothing of any recollection of a previous state of existence. He is also said to have kept up constant intercourse with the soul of a friend who had died (Herm. in Joseph. *Con. Ap.* i. 22). Further particulars later on.

[2] By Hieronymus, no doubt the Peripatetic, ap. Diog. viii. 21, cf. 38; Hermippus, vide Diog. viii. 41, in imitation of the story of Zalmoxis (Herod. iv. 95), puts an insipid natural interpretation upon this legend, about which Tertullian, *De An.* c. 28, is unnecessarily angry. Its true origin is probably to be found in a work attributed to Pythagoras, called **Κατάβασις εἰς ᾄδου**. Cf. Diog. 14: *ἀλλὰ καὶ αὐτὸς ἐν τῇ γραφῇ φησι, δι' ἑπτὰ* (for which Rohde, *Rh. Mus.* xxvi. 558, appealing to Iambl. *Theol. Arithm.* p. 41, would substitute *ἑκκαίδεκα*) *καὶ διακοσίων ἐτέων ἐξ ἀΐδεω παραγεγενῆσθαι ἐς ἀνθρώπους. Ibid.* 4: *τοῦτόν φησιν Ἡρακλείδης ὁ Ποντικὸς περὶ αὑτοῦ τάδε λέγειν, ὡς εἴη ποτὲ γεγονὼς Αἰθαλίδης*, where the present *λέγειν* points to some writing; cf. what Rohde, *loc. cit.* further adduces. That writings of this kind were not strange to the Pythagoreans is well known. The Orphic Katabasis is said to have been composed by the Pythagorean Cercops (Clem. *Strom.* i. 333 A).

[3] Aristox. ap. Diog. viii. 8, 21; Porph. 41. A statement so mythical, and so improbable in itself, gives us, however, no right to identify Pythagoreanism with the Delphic philosophy, as Curtius does, *Griech. Geschich.* i. 427.

[4] Dicæarchus, ap. Porph. 18; cf. Justin. *Hist.* xx. 4; speaks of lectures, which, in the first instance, he delivered before the Council of Elders (*τὸ τῶν γερόντων ἀρχεῖον*), and then by command of the authorities before the youths, and finally the women. A lengthy and declamatory account of the contents of these lectures is given in Iambl. *V. P.* 37–57, and a modernised paraphrase in Röth, ii. a, 425–450. I do not believe that this enlarged version is taken from Dicæarchus; partly because it seems too poor in content for this philosopher, and partly because Dicæarchus, according to Porphyry, makes Pythagoras appear first before the ruling council, and then before the youths; whereas in Iamblichus he is represented to have made his first

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appearance in the gymnasium, and then on the report of his lecture there, to have been commanded to speak before the council. It would seem that a later biographer of Pythagoras had added to the statements of Dicæarchus; and it is probable that this was none other than Apollonius; since Iamblichus in his *V. P.* 259 sq. adduces a narrative from him in a similar style, and (as Rohde, *Rhein. Mus.* xxvii. 29, remarks) Apollonius, *ibid.* 264, expressly makes mention of the temple of the Muses, to the building of which, according to section 50, these discourses of Pythagoras had given occasion. Apollonius himself (as is proved by Rohde, *loc. cit.* 27 sq. from Iambl. section 56; cf. Diog. viii. 11; and Just. xx. 4, *sub. fin.*; cf. also Porph. *V. P.* 4) seems to have based his own account on an exposition of the Timæus, and to have also made use of sayings reported by Aristoxenus and others; cf. Iambl. section 37. 40, 47, with Diog. viii. 22, 23; Stob. *Floril.* 44, 21 (ii. 164, *Mein.*), section 55 with Stob. 74, 53.

[1] Vide besides what has been already quoted, the legendary account of Nicomachus, ap. Porph. 20, and Iambl. 30; Diodor. *Fragm.* p. 554; Favorin. ap. Diog. viii. 15; Valer. Max. viii. 15, ext. 1.

[2] Cf. Alcidamas, ap. Arist. *Rhet.* ii. 23, 1398 b, 14: Ἰταλιῶται Πυθαγόραν (ἐτίμησαν). Plutarch, *Numa*, c. 8, states, on the authority of Epicharmus, that Pythagoras was presented by the Romans with the right of citizenship; but he has been deceived by a forged writing, vide Welcker, *Klein. Schriften*, i. 350. According to Plutarch, *loc. cit.*, and Pliny, *Hist. Nat.* xxxiv. 6, 26, a pillar was subsequently, at the time of the Samnite war, erected to him in Rome as the wisest of the Greeks.

[3] Porph. 22: προσῆλθον δ' αὐτῷ, ὥς φησιν Ἀριστόξενος, καὶ Λευκανοὶ καὶ Μεσσάπιοι καὶ Πευκέτιοι καὶ Ῥωμαῖοι. The same, without the appeal to Aristoxenus, is to be found in Diog. viii. 14: Nic. ap. Porph, 19 sq.; Iambl. 29 sq., 265 sqq. 127 (where mention is made of an Etruscan Pythagorean).

[4] Cf. as to the Pythagorean women, Diog. 41 sq.; Porph. 19 sq.; Iambl. 30, 54, 132, 267, end. As to the most celebrated of them, Theano, who is generally called the wife, but sometimes the daughter of Pythagoras, cf. Hermesinax, ap. Athen. xiii. 599 a; Diog. 42; Porph. 19; Iambl. 132, 146, 265; Clem. *Strom.* i. 309; C. iv. 522 D; Plut. *Conj. Præc.* 31, p. 142; Stob. *Ecl.* i. 302; *Floril.* 74, 32, 53, 55; *Floril. Monac.* 268–270 (Stob. *Floril. Ed. Mein.* iv. 289 sq.). As to the children of Pythagoras, Porph. 4 (where there is a statement of Timæus of Tauromenium about his daughter, repeated in Hieron. *Adv. Jovin.* i. 42); Diog. 42 sq.; Iambl. 146; *Schol. in Plat.* p. 420, Bekk. As to his household economy, Iambl. 170.

these countries[1] owned him for their teacher, and by his influence, order, freedom, civilisation, and law were re-established in Crotona and all Magna Græcia.[2] Even the Druids of Gaul are called his disciples by later writers.[3] The Pythagorean school is represented to us not merely as a scientific association, but also, and principally, as a religious and political society. Entrance into it was only to be obtained by a strict probation, and on condition of several years' silence.[4] The members recognised each other by secret signs;[5]

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[1] Especially Zaleucus and Charondas, of which this is asserted by Seneca, *Ep.* 90, 6, and also by Posidonius; similarly Diog. viii. 16 (whether this is taken from Aristoxenus cannot be ascertained); Porph. 21; Iambl. 33, 104, 130, 172 (both probably follow Nicomachus): cf. Ælian, V. H. iii. 17; Zaleucus is also mentioned in this connection ap. Diodorum, xii. 20. Now Zaleucus was certainly a hundred years earlier than Pythagoras, and so probably was Charondas (cf. Hermann, *Griech. Antiquit.* i. section 89); if, on the other hand, we recognise this Charondas (vide Diodorus, xii. 11; *Schol. in Plat.* p. 419), as the lawgiver of Thurii (445 B.C.), he would be much too young for a personal disciple of Pythagoras. The appearance of such statements, therefore, in the above-mentioned writers, is a fresh proof how little real historical foundation exists, even for ancient and widely spread accounts of Pythagoras. Some other Pythagorean lawgivers are named in Iambl. 130, 172. The story of Numa's relations with Pythagoras is discussed in vol. iii. b, 692, second edition.

[2] Diog. viii. 3; Porph. 21 *sq.*, 54; Iambl. 33, 50, 132, 214; Cic. *Tusc.* v. 4, 10; Diodor. *Fragm.* p. 554; Justin. xx. 4; Dio *Chrysost. Or.* 49, p. 249 R.; Plut. *C. Prisc. Philos.* i. 11, p. 776; cf. the supposed conversation of Pythagoras with Phalaris; Iambl. 215 sqq.

[3] Vide *supra*, p. 73, 1; cf. p. 330.

[4] Taurus, ap. Gell. i. 9; Diog. viii. 10; Apul. *Floril.* ii. 15; Clem. *Strom.* vi. 580, A; Hippol. *Refut.* i. 2, p. 8, 14; Iambl. 71 sqq. 94; cf. 21 sqq.; Philop. *De An.* D, 5; Lucian, *Vit. Auct.* 3. The tests themselves, among which that of physiognomy is mentioned (Hippolytus called Pythagoras the discoverer of physiognomy), and the duration of the silent noviciate, is variously given. The countenance of the teachers was hidden from the novices by a curtain, as in the mysteries. Cf. Diog. 15.

[5] Iambl. 238. The Pentagon is said to have been such a sign (*Schol. in Aristoph.*; Clouds, 611, i. 249, Dind.; Lucian, *De Salut.* c. 5). Krische, p. 44, thinks the gnomon also.

only a certain number of them were admitted into the inner circle and initiated into the esoteric doctrines of the school:[1] persons not belonging to the society were kept at a distance,[2] unworthy members were excluded with contumely.[3] According to later accounts, the Pythagoreans of the higher grade had all their goods in common,[4] in obedience to a minutely prescribed rule of life reverenced among them as a divine ordinance.[1] This also enjoined linen clothing,[2] and entire abstinence from bloody offerings and animal food,[3] from beans and some other kinds of nourishment;[4] even celibacy is said to have been imposed

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[1] Gellius, *loc. cit.*, names three classes of Pythagorean disciples: *ἀκουστικοὶ* or novices; *μαθηματικοί*, *φυσικοί*; Clem. *Strom.* v. 575 D; Hippolyt. *Refut.* i. 2, p. 8, 14; Porph. 37; Iambl. *V. P.* 72, 80 sqq.; 87 sq.; and Villoison's *Anecd.* ii. 216—two, the Esoterics and Exoterics; the former were also called Mathematicians, and the latter Acousmaticians; according to Hippolytus and Iamblichus, the Esoterics were called Pythagoreans, and the exoterics Pythagorists. The unknown writer, ap. Phot. *Cod.* 249, distinguishes Sebasti, Politici, and Mathematici; also Pythagorici, Pythagoreans, and Pythagorists; calling the personal scholars of Pythagoras, Pythagorici; the scholars of these, Pythagoreans; and the *ἄλλως ἔξωθεν ζηλωταί*, Pythagorists. On these statements (the recent date of which he does not consider) Röth (ii. a, 455 sq.; 756 sq.; 823 sqq.; 966 b, 104) grounds the following assertion. The members of the inner Pythagorean school (he says) were called *Pythagorici*, and those of the outer circle *Pythagoreans*; there was an important distinction between their doctrines, all the systems of the *Pythagoreans* being founded on the Zoroastrian dualism, which (according to p. 421 sq., it was imported into Crotona by the physician Democedes) is not to be found in the conceptions of Pythagoras, which are genuinely Egyptian. These were the Pythagoreans, and these alone (to them belonged Empedocles, Philolaus and Archytas, and Plato and his followers were allied to them), to whom the accounts of Aristotle have reference, and who were generally recognised by the ancients before the period of the Ptolemies. Now all the authors who mention such a distinction call the exoterics Pythagorists, and the esoterics, the true disciples of Pythagoras, Pythagoreans; and the anonymous writer in Photius applies this name only to the second generation. But Röth finds a way out of this difficulty. We have only to correct the anonymous writer to the extent of understanding Acousmaticians under Pythagoreans; and in respect to Iamblichus to substitute ‘Pythagorici for Pythagoreans, and Pythagoreans for Pythagorists (Röth has overlooked the passage in Hippolytus), and all will be right.’ On these arbitrary conjectures a theory is built up, which is entirely to overturn, not only the hitherto accepted theory of Pythagoreanism, but the testimony of Philolaus, Plato, Aristotle, &c.

[2] Apollon. ap. Iambl. 257.

[3] Iambl. 73 sq., 246; Clemens, *Strom.* v. 574, D.

[4] The oldest authorities for

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this are Epicurus (or Diocles) ap. Diog. x. 11; and Timæus of Tauromenium, *ibid.* viii. 10; *Schol. in Plat., Phædr.* p. 319, Bekk. Subsequently, after the appearance of the Neo-Pythagoreans, who must have taken their notions chiefly from the ideal Platonic state, the statement is universal; vide Diog. viii. 10; Gell. *loc. cit.*; Hippol. *Refut.* i. 2, p. 12; Porph. 20; Iambl. 30, 72, 168, 257, &c. Phot. *Lex.* *κοινὰ*, makes Pythagoras introduce community of goods among the inhabitants of Magna Græcia, and cites Timæus as an authority.

[1] Porph. 20, 32 sqq.; following Nicomachus and Diogenes, the author of the book of prodigies: Iambl. 68 sq., 96 sqq., 165, 256. The latter gives a detailed description of their whole daily life.

[2] Iambl. 100, 149; both as it would seem (Rohde, *Rhein. Mus.* xxvii. 35 sq., 47) originally from Nicomachus, section 100, indirectly from Aristoxenus, who, however, was only speaking of the Pythagoreans of his own time; Apuleius, *De Magia*, c. 56; Philostr. *Apollon.* i. 32, 2, who adds to the prescripts of linen clothing a prohibition to cut the hair. Others speak only of white garments, e.g. Ælian, *V. H.* xii. 32.

[3] First attributed to Pythagoras himself by Eudoxus, ap. Porph. *V. P.* 7, and Onesicritus (about 320 B.C.), Strabo, xv. i. 65, p. 716 Cas.; and to the Pythagoreans generally by the poets of the Alexandrian period, ap. Diog. viii. 37 sq.; Athen. iii. 108 sq.; iv. 161 a, sqq., 163 d. Later on, the statement became almost universal; vide Cic. *N. D.* iii. 36, 88; *Rep.* iii. 8; Strabo, vii. 1, 5, p. 298; Diog. viii. 13, 20, 22; Porph. *V. P.* 7; *De Abstin.* i. 15, 23; Iambl. 54, 68, 107 sqq., 150; Plut. *De Esu Carn.* sub init.; Philostr. *loc. cit.*; Sext. *Math.* ix. 12, 7 sq., and many others.

[4] Heracleides (no doubt of Pontus) and Diogenes, ap. Joh. *Lyd. De Mens.* iv. 29, p. 76; Callimachus, ap. Gell. iv. 11; Diog. viii. 19, 24, 33, following Alexander, Polyhistor and others; Cic. *Divin.* i. 30, 62; Plut. *Qu. Conv.* viii. 8, 2; Clemens. *Strom.* iii. 435, *D*; Porph. 43 sqq.; Iambl. 109; Hippol. *Refut.* i. 2, p. 12; Lucian, *V. Auct.* 6, etc. According to Hermippus and others, ap. Diog. 39 sq., Pythagoras was slain in his flight, because he would not escape over a bean field. Neanthes (ap. Iambl. 189 sqq.) relates the same of Pythagoreans in the time of Dionysius the elder. He also tells a further legend, to be noticed *infra*, as to the pertinacity with which the reason of the bean prohibition was kept secret. This last with a little alteration is transferred to Theano, by David, *Schol. in Arist.* 14 a, 30. Pythagoras is also said to have prohibited wine

upon them.[1] Older writers, indeed, who are more to be trusted, say nothing of the community of goods,[2] though they extol the loyalty of the Pythagoreans towards friends and co-associates.[3] The precepts as to food and clothing (over and above the general principle of moderation and simplicity[4]) are reduced by these writers to a few isolated ordinances[5] in connection with

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(Iambl. 107, 69, and Epiph. *Hær.* p. 1087 B). The prohibition of beans is discussed at length by Bayle, *Art. Pythag.* Rem. H.

[1] Ap. Clem. *Strom.* iii. 435 c (Clemens himself contradicts it); cf. Diog. 19: *οὔποτ' ἐγνώσθη* (Pyth.) *οὔτε διαχωρῶν οὔτε ἀφροδισιάζων οὔτε μεθυσθείς.*

[2] Vide *supra*, 348, 4, and Krische, p. 27 sq., who rightly finds a reason for this statement in a misunderstanding of the proverb *κοινὰ τὰ τῶν φίλων*, which was probably not peculiar to the Pythagoreans (cf. Aristotle, *Eth. N.* ix. 8, 1168 b, 6). It is, however, also ascribed to Pythagoras by Timæus, ap. Diog. 10; Cic. *Leg.* i. 12, 34, and Ant. Diog. ap. Porph. 33.

[3] Cf. the well-known story of Damon and Phintias, Cic. *Off.* iii. 10, 45; Diodor. *Fragm.* p. 554; Porph. 59; Iambl. 233 sq. after Aristoxenus, to whom Dionysius himself told the story, and others. Also other anecdotes, ap. Diodor. *loc. cit.*; Iambl. 127 sq., 185, 237 sqq., and the more general statements in Cic. *Off.* i. 17, 56; Diod. *loc. cit.*; Porph. 33, 59; Iambl. 229 sq.; also Krische, p. 40 sq. These stories, however, for the most part presuppose the existence of private property among the Pythagoreans.

[4] Aristoxenus and Lyco, ap. Athen. ii. 46 sq.; x. 418 e; Porph. 33 sq.; Iambl. 97 sq.; Diog. viii. 19.

[5] Aristoxenus, ap. Athen. x. 418 sq.; Diog. viii. 20; Gell. iv. 11, expressly denies that Pythagoras abstained from meat; he only refused the flesh of ploughing oxen and bucks (the former probably on account of their utility, and the latter on account of their lustfulness). Plutarch (Gell. *loc. cit.*; cf. Diog. viii. 19) quotes the same statement from Aristotle. According to him, the Pythagoreans merely abstained from particular parts of animals and from certain fishes (so that ap. Diog. viii. 13, only the remark about the unbloody altar, and not the story about Pythagoras, can have been taken from Aristotle). Plutarch, *Qu. Conv.* viii. 8, 1, 3, and Athen. vii. 308 c, say that the Pythagoreans eat no fish and very little meat, chiefly the flesh of offerings; similarly Alexander, ap. Diog. viii. 33, speaking of many prohibitions of food (often without historical foundation) does not mention abstinence from flesh. Even Ant. Diog. (ap. Porph. 34, 36) and Iambl. 98 (in an account which no doubt is indirectly taken from Aristoxenus) are agreed on this point with these writers, though differing from them on many others, and Plut. *Numa*, 8, says of the Pythagorean offerings

particular forms of worship;[1] whether these ordinances originated with the Italian Pythagoreans, or only belong

that they were, *for the most part*, bloodless. On the other hand, Theophrastus must have ascribed to the Pythagoreans the abstention from flesh, which is asserted of the Orphic Pythagorean mysteries of his time (cf. Pt. ii. a, 29, 1, 3rd ed.; Pt. iii. b, 65 *sq*. 2nd ed.), if all that we read in Porph. *De Abstin.* ii. 28, is taken from him. Bernays, however (*Theoph. v. d. Frömm.* p. 88), thinks, probably with justice, that the sentences which treat of the Pythagoreans, δι' ὅπερ . . . παρανομίας, are added by Porphyry. But, even according to this representation, they, at least, tasted the flesh of offerings, so that they must have had animal sacrifices. The sacrifice of a bull is ascribed to Pythagoras on the occasion of the discovery of the Pythagorean principle, and other mathematical discoveries (Apollodor. ap. Athenæum, x. 418 sq., and Diog. viii. 12; Cic. *N. D.* iii. 36, 88; Plut. *Qu. Conv.* viii. 2, 4, 3; *N. P. Suav.* v. 11. 4, p. 1094; Procl. *in Eucl.* 110 u, 426 Fr. Porph. *V. P.* 36, infers from this the sacrifice of a σταίτινος βοῦς), and he is also said to have introduced meat diet among the athletes: vide *infra*. In regard to beans, Aristoxenus (ap. Gellius, *loc. cit.*) maintains that Pythagoras, far from prohibiting them, particularly recommended this vegetable. It is, therefore, probable, that Hippol. *Refut.* i. 2. p. 12, and Porph. 43 sqq., derived their absurd account (mentioned also by Lucian, *Vit. Auct.* 6) of the prohibition of beans, not from Aristoxenus, but from Antonius Diogenes, from whom Joh. Lydus, *De Mens.* iv. 29, p. 76, quotes it in the same words as Porphyry; and though the contradiction of Aristoxenus itself presupposes that such a prohibition was even at that period attributed to Pythagoras, it nevertheless shows that it was not acknowledged by those Pythagoreans whose tradition he followed. Gell. *loc. cit.* explains the story of the beans as a misunderstanding of a symbolical expression; the most probable explanation is that a custom, which really belonged to the Orphics, was transferred to the ancient Pythagoreans; cf. Krische, p. 35. The statement that the Pythagoreans wore only linen clothes is contradicted by the account in Diog. viii. 19 (cf. Krische, p. 31), where he excuses them clumsily enough for wearing woollen garments, by asserting that linen at that time was unknown in Italy. According to Herod. ii. 81, the whole matter is reduced to this: that in the Orphic Pythagorean mysteries the dead were forbidden to be buried in woollen clothes.

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[1] As Alexander (Diog. viii. 33) expressly says: ἀπέχεσθαι βρωτῶν θνησειδίων τε κρεῶν καὶ τριχλῶν καὶ μελανούρων καὶ ᾠῶν καὶ τῶν ᾠοτόκων ζῴων καὶ κυάμων καὶ τῶν ἄλλων ὧν παρακελεύονται καὶ οἱ τὰς τελετὰς ἐν τοῖς ἱεροῖς ἐπιτελοῦντες, cf. Plut. *Qu. Conv.* viii. 8, 3, 15. That the Pythagoreans had peculiar religious services and rites, and that these formed the external bond of their society, must be presupposed from Herod. ii. 81. Plato also (*Rep.* x. 600 B) speaks of a πυθαγόρειος τρόπος τοῦ βίου, by which the disciples of Plato were distinguished from others. Such a distinctive peculiarity in their mode of life

to the later Orphics of Pythagorean tendencies; whether, consequently, they arose from Pythagoreanism or from the Orphic mysteries, we do not certainly know. The celibacy of the Pythagoreans is so entirely unrecognised even by later writers that they represent Pythagoras as married,[1] and cite from him and from his school numerous precepts concerning conjugal life (vide *infra*). Among the sciences, besides philosophy proper, the Pythagoreans chiefly cultivated mathematics, which owes to them its first fruitful development.[2] By ap-

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would, in itself, lead us to conjecture something of a religious character; and this appears still more clearly from such historical accounts as we possess of the practical life of the Pythagoreans, and from what may be accepted as genuine of the ceremonial prescripts in Diog. 10, 33 sqq.; Iambl. 163 sq., 256; also from the early connection of Pythagoreanism with the Bacchic Orphic mysteries, the evidence for which is to be found partly in the above references, and partly in the forgery of Orphic writings by Pythagoreans (Clemens, *Strom.* i. 333 A; Lobeck, *Aglaoph.* 347 sqq.; cf. Ritter, i. 363, 293).

[1] Vide *supra*, p. 341, 4, and Musonius, ap. Stob. *Floril.* 67, 20; cf. Diog. 21.

[2] It is scarcely necessary to quote evidence for this, as Arist. *Metaph.* i. 5. sub init. (*οἱ καλούμενοι Πυθαγόρειοι τῶν μαθημάτων ἁψάμενοι πρῶτοι ταῦτα προήγαγον καὶ ἐντραφέντες ἐν αὐτοῖς τὰς τούτων ἀρχὰς τῶν ὄντων ἀρχὰς ᾠήθησαν εἶναι πάντων*), since it is sufficiently proved by the whole character of the Pythagorean doctrine, and by the names of Philolaus and Archytas. Even at a later period Magna Græcia and Sicily continued to be the principal seat of mathematical and astronomical studies. Considerable knowledge and discoveries in mathematics and astronomy were ascribed to Pythagoras himself; cf. Aristox. ap. Stob. *Ecl.* i. 16, and Diog. viii. 12; Hermesianax and Apollodor. ap. Athen. xiii. 599 a, x, 418 sq., and Diog. i. 25; viii. 12; Cic. *N. D.* iii. 36, 88; Plin. *Hist. Nat.* ii. 8, 37; Diog. viii. 11, 14; Porph. *V. P.* 36; Plut. *Qu. Conv.* viii. 2, 4, 3; *N. P. Suav. Vivi.* 11, 4, p. 1094; *Plac.* ii. 12; Procl. *in Eucl.* 19 m (where, instead of *ἀλόγων*, we should doubtless read *ἀναλόγων*), 110, 111 (65, 426, 428 Fr.); Stob. *Ecl.* i. 502; Lucian, *Vit. Auct.* 2: *τί δὲ μάλιστα οἶδεν; ἀριθμητικὴν, ἀστρονομίαν, τερατείαν, γεωμετρίαν, μουσικὴν, γοητείαν, μάντιν ἄκρον βλέπεις.* Although Pythagoras unquestionably gave the impulse to the fruitful development of mathematics in his school, it is impossible, from the fragmentary and wholly untrustworthy statements about him, to form any conception of his mathematical knowledge at

plying mathematics to music they became the founders of the scientific theory of sound, which enters so deeply into their system.[1] The practical importance of music, however, was quite as great among them; it was cultivated partly as a means of moral education, partly in connection with the art of medicine;[2] for this, too,[3]

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all approximating to historical certainty. Even the state of mathematical science in the Pythagorean school, at the time of Philolaus and Archytas, could only be described by one accurately acquainted with ancient mathematics, and by such a one only with the greatest caution and reserve. We shall confine ourselves here to what concerns the general principles of the number-theory and harmony, or the conceptions of the system of the universe. Röth (ii a 962 b, 314) quotes with essential omissions and alterations a passage from Varro, L. *lat.* v. 6, to prove that Pythagoras made a map in Tarentum, of which Varro says not a word. He is there speaking of a bronze image of Europa on the bull which Pythagoras (Pythagoras of Rhegium, the well-known sculptor of the beginning of the fifth century) made at Tarentum. Marc Capella, *De Nupt. Philol.* vi. 5, p. 197, Grot., attributes to Pythagoras the determination of the terrestrial zones, and not a map.

[1] According to Nicomachus, *Harm.* i. 10; Diog. viii. 12; Iambl. 115 sqq. and others (vide *infra*). Pythagoras himself invented harmony. What is more certain is, that it was first developed in his school, as is shown by the name and the theories of Philolaus and Archytas, on which more hereafter. Plato says in *Rep.* vii. 530 D, that the Pythagoreans regarded Harmony and Astronomy as two sister sciences.

[2] Vide Porph. 32; Iambl. 33, 64, 110 sqq., 163, 195, 224; Strabo, i. 2, 3, p. 16; x. 3, 10, p. 468; Plut. *Is. et Os.* c. 80, p. 384; *Virt. Mor.* c. 3, p. 441; Cic. *Tusc.* iv. 2; Sen. *De ira*, iii. 9; Quintil. *Instit.* i. 10, 32; ix. 4, 12; Censorin. *Di. Nat.* 12; Ælian, *V. H.* xiv. 23; Sext. *Math.* vi. 8; Chamäleo, *ap.* Athen. xiii. 623 (on Clinias). These accounts, no doubt, contain much that is fabulous, but *their* historial foundation is beyond question. The Harmony of the Pythagoreans presupposes a *diligent* study of music. The moral application of this art corresponds to the character of the Doric life and of the cultus of Apollo; and we elsewhere find that that cultus was connected with music as a medicinal cure. In accordance with this the Pythagorean music is represented as grave and quiet, and the lyre as their chief instrument. Athen. iv. 184 e, however, enumerates a whole series of Pythagorean flute-players.

[3] Diog. viii. 12; Porph. 33; Iambl. 110, 163. Apollon. ap. Iambl. 264. Celsus, *De Medic.* i. *Præf.* names Pythagoras among the most celebrated physicians. Cf. what is said further on about Alcmæon's connection with the Pythagoreans.

as well as gymnastic,[1] flourished among the Pythagoreans. As might be expected, after the proof of supernatural wisdom related in the myth of the Samian philosopher (vide *supra*), Pythagoras and his school are said to have applied themselves to prophecy.[2] As a help to morality, we are told that strict daily self-examination was, among other things,[3] especially enjoined on the members of the society.[4] Since, however, at that period, ethics were inseparable from politics, we are also told that the Pythagoreans not only occupied themselves zealously with politics[5] and exercised the greatest influence on the legislation and administration of the cities of Magna Græcia,[6] but also that they constituted in Crotona and other Italian towns a regular political confederation,[7] which, by its influence upon the deliberative assemblies[8] of these towns, really held the reins of government, and employed their power to promote an aristocratic organisation of the ancient Doric type.[1] They no less rigorously maintained the doctrine of their master, and silenced all opposition with the famous dictum *αὐτὸς ἔφα*.[2] We are told, however, that

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[1] Cf. Iambl. 97; Strabo, vi. 1, 12, p. 263; Justin. xx. 4; also Diodor. *Fragm.* p. 554. Milo, the celebrated athlete, is well known to have been a Pythagorean. The statement (Diog. 12 sq., 47; Porph. *V. P.* 15; *De Abst.* i. 26; Iambl. 25) that Pythagoras introduced meat diet among the athletes, which is, however, scarcely historical, seems to refer to Pythagoras the philosopher.

[2] Cic. *Divin.* i. 3, 5; ii. 58, 119; Diog. 20, 32; Iambl. 93, 106, 147, 149, 163; Clem. *Strom.* i. 334 A; Plut. *Plac.* v. 1, 3; Lucian (vide *supra*, p. 338, 4). Magical arts were likewise attributed to Pythagoras, Apul. *De Magia*, c. 27, p. 504.

[3] Diodor. *Fragm.* p. 555.

[4] *Carm. Aur.* v. 40 sqq., and after this source, Cic. *Cato*, ii. 38; Diodor. *loc. cit.*; Diog. viii. 22; Porph. 40; Iambl. 164 sq., 256.

[5] According to Iamblichus, 97, the hours after meals were devoted to politics, and Varro, vide Augustin. *De Ord.* ii. 20, maintains that Pythagoras only communicated his political doctrines to the ripest of his scholars.

[6] Vide *supra*, p. 341, 5; 342, 1, and Valer. Max. viii. 15, ext. I; *ibid.* c. 7, ext. 2.

[7] Consisting, in Crotona, of 300 members; according to some accounts, of more.

[8] In Crotona, these were designated by the name of *οἱ χίλιοι* (Iamblichus, *V. P.* 45, 260, after Apollonius), which is so large a number for a senate, that it might lead us rather to suppose that the ruling portion of the citizens was intended. Diod. xii. 9, calls them *σύγκλητος*,

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Porph. 18, τὸ τῶν γερόντων ἀρχεῖον. Both Diodorus and Iamblichus, however, speak of the δῆμος and ἐκκλησία, which, according to Iamblichus, 260, only had to resolve upon that which was brought before it by the χίλιοι.

[1] Iambl. 249, after Aristoxenus, 254 sqq.; after Apollonius, Diog. viii. 3; Justin. xx. 4. Polybius, ii. 39, mentions the Pythagorean συνέδρια in the cities of Magna Græcia. Plut. *C. Princ. Philos.* i. 11, p. 777, speaks of the influence of Pythagoras on the leading Italiotes, and Porph. 54 says the Italians handed over the direction of their states to the Pythagoreans. In the contest between Crotona and Sybaris, which ended in the destruction of the latter, it was, according to Diodorus, respect for Pythagoras which decided the Crotonians to refuse to deliver up the fugitive Sybarite nobles, and to undertake a war with their more powerful rival. It was Milo, the Pythagorean, who led his countrymen to the fatal battle on the Traës. Cicero, indeed (*De Orat.* iii. 15, 56; cf. *Tusc.* v. 23, 66), includes Pythagoras with Anaxagoras and Democritus among those who renounced political activity in order to live entirely for science; but this does not destroy the former evidence, since in the first place it is uncertain whence Cicero derived his information; and in the second, Pythagoras himself held no public office. Still less does it follow from Plato, *Rep.* x. 600 C, that the Pythagoreans abstained from political activity; though, according to this passage, their founder himself worked, not as a statesman, but by personal intercourse. The strictly aristocratic character of the Pythagorean politics appears from the charges against them in Iambl. 260; Athen. v. 213 f (cf. Diog. viii. 46; Tertull. *Apologet.* c. 46), and from the whole persecution by Cylon. Chaignet's theory (i. 54 sq.), however, that the government of Crotona was first changed by Pythagoras from a moderate democracy into an aristocracy is supported by no tradition; it is, on the contrary, contradicted by the passage in Strabo, viii. 7, i. p. 384 (after Polybius, ii. 39, 5), where it is said of the Italians: *μετὰ τὴν στάσιν τὴν πρὸς τοὺς Πυθαγορείους τὰ πλεῖστα τῶν νομιμῶν μετενέγκασθαι παρὰ τούτων* (the Achæans, who had a democratic constitution), which would not have been necessary if they had only required to re-establish their own democratic institutions; while, on the other hand (vide previous note), the ἐκκλησία decided many things, even under the Pythagorean administration.

[2] Cic. *N. D.* i. 5, 10; Diog. viii. 46; Clemens, *Strom.* ii. 369 C; Philo. *Qu. in Gen.* i. 99, p. 70.

this doctrine was carefully kept within the limits of the school, and that every transgression of these limits was severely punished.[1] In order that the doctrine might be quite incomprehensible to the uninitiated, the Pythagoreans, and in the first instance the founder of the school, are said to have employed that symbolical mode of expression in which are contained most of the maxims handed down to us as Pythagorean.[2]

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[1] Aristoxenus, Diog. viii. 15, says it was a principle of the Pythagoreans, *μὴ εἶναι πρὸς πάντας πάντα ῥητά*, and, according to Iambl. 31, Aristotle reckons the saying about Pythagoras, quoted p. 338, 3, among the *πάνυ ἀπόῤῥητα* of the school. Later writers (as Plut. *Numa*, 22; Aristocles, ap. Eus. *Pr. Ev.* xi. 3, 1; the Pseudo-Lysis, ap. Iambl. 75 sqq., and Diog. viii. 42; Clem. *Strom.* v. 574 D; Iambl. *V. P.* 199, 226 sq., 246 sq.; *π. κοιν. μαθ. ἐπιστ*; Villoison, *Anecd.* ii p. 216; Porph. 58; an anonymous person, ap. Menage, Diog. viii.; cf. Plato, *Ep.* ii. 314 A) dilate much on the strictness and fidelity with which the Pythagoreans kept even geometrical and other purely scientific theorems as secrets of their fraternity, and on the abhorrence and punishment of the gods which overtook every betrayal of this mystery. The first proof in support of this opinion is the assertion (*sup.* p. 315) of Neanthes about Empedocles and Philolaus, and in the legendary narrative of the same author, as also of Hippobotus, ap. Iambl. 189 sqq. (considerably more recent, cf. Diog. viii. 72), according to which Myllias and Timycha suffer to the uttermost, the latter even biting out his own tongue, like Zeno in Elea, in order not to reveal to the elder Dionysius the reason of Pythagoras's prohibition of beans. On the other hand, it is a question whether the statement of Timæus, in Diog. viii. 54, on which that of Neanthes is unquestionably founded, that Empedocles, and afterwards Plato, were excluded from Pythagorean teaching, being accused of *λογοκλοπία*—really refers to the publishing of a secret doctrine, and not to the proclaiming improperly of Pythagorean doctrines as their own. Moreover, we cannot give much credit to the testimony of an author, who, in spite of all chronology, makes Empedocles (*loc. cit.*) the personal pupil of Pythagoras.

[2] Iamblich. 104 sq., 226 sq. Collections and interpretations of Pythagorean symbols are mentioned by Aristoxenus in the *πυθαγορικαὶ ἀποφάσεις*, and by Alexander Polyhistor and Anaximander the younger, ap. Clem. *Strom.* i. 304, B. Cyrill. *c. Jul.* iv. 133 D; Iambl. *V. P.* 101, 145; *Theol. Arithm*, p. 41; Suidas, *Ἀναξίμανδρος* (cf. Krische, p. 74 sq.; Mahne, *De Aristoxeno*, 94 sqq.; Brandis, i. 498); another work, said to be of ancient Pythagorean origin, bearing the name of Androcydes, is discussed, part iii. b, 88, second edition. Aristotle's work on the Py-

How much of these statements may be accepted as historical it is difficult to determine in detail; we can only establish approximately certain general results. We see that so early as the time of Aristotle, Aristoxenus, and Dicæarchus, many miraculous tales respecting Pythagoras were in circulation; but whether he himself appeared in the character of a worker of miracles cannot be ascertained. The manner in which he is spoken of by Empedocles and Heracleitus[1] renders it probable that, for long after his death, he was merely esteemed as a man of unusual wisdom, without any supernatural character. This wisdom seems to have been chiefly of a religious kind, and to have served religious ends. Pythagoras appears as the founder of a religious association with its own rites and ceremonies; thus he may have passed for a seer and a priest, and may have declared himself as such: this is extremely likely from the whole character of the Pythagorean legend,

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thagoreans seems to have given many of these symbols (vide Porph. 41; Hieron. *c. Ruf.* iii. 39, T. ii. 565, Vall.; Diog. viii. 34), and various authors (as Demetrius of Byzantium mentioned by Athen. x, 452 c) have spoken of them incidentally. From these ancient compilations probably came the greater part of the sentences ascribed to Pythagoras and the Pythagoreans by later writers, as Plutarch (especially in the *συμποσιακὰ*), Stobæus, Athenæus, Diogenes, Porphyry, and Iamblichus, Hippolytus, &c. These sentences, however, cannot be much relied upon as representing the Ethics and religious doctrine of the Pythagoreans; for in the first place their meaning is very uncertain, and in the second, what is genuinely Pythagorean is hard to distinguish from later ingredients. In regard to the Pythagorean *Philosophy*, they are of little importance. Collections of these sentences are to be found in Orelli, *Opusc. Græc. Vet. Sent.* i, 60 sq.; Mullach, *Fragm. Philos.* i. 504 sqq.; Göttling, *Ges. Abhand.* i. 278 sq., ii. 280 sq., has subjected them to a thorough criticism. But his interpretations are often too artificial, and he is apt to seek unnecessarily for hidden meanings in prescripts, which originally were of a purely ritualistic character. Cf. also Rohde, *Rh. Mus.* xxvi. 561.

[1] Vide *supra*, p. 336, 4; 338, 4.

and from the existence of Pythagorean orgies in the fifth century; but that does not make him by any means the extraordinary phenomenon presupposed by the later tradition; he merely stands in the same category with Epimenides, Onomacritus, and other men of the sixth and seventh centuries. Further, it seems certain that the Pythagorean society distinguished itself above all other similar associations by its ethical tendency; but we can get no true idea of its ethical aims and institutions from the later untrustworthy authorities. Pythagoras doubtless entertained the design of founding a school of piety and morality, temperance, valour, order, obedience to government and law, fidelity to friends, and generally for the encouragement of all virtues belonging to the Greek, and particularly to the Doric conception of a good and brave man; virtues which are particularly insisted on in the sentences attributed with more or less probability to Pythagoras. For this purpose he appealed first to the religious motives which resulted from the belief in the dominion of the gods, and especially from the doctrine of transmigration; then he had recourse to the educational methods and usages of his native country, such as music and gymnastics. We are assured by the most trustworthy traditions that these two arts were zealously practised in the Pythagorean school. With these may have been also connected (*vide supra*) the use of certain therapeutic and secret remedies. Incantation, song, and religious music probably played the part attributed to them in the myths; this is rendered probable by the whole character of the art of medicine in ancient times, closely allied as it was with religion, sorcery and music; while, on the other hand, the statement that the Pythagorean art of medicine consisted mainly of dietetics[1] is confirmed, not merely by its connection with gymnastic and by the whole character of the Pythagorean mode of life, but also[2] by Plato's similar view.[3] It is probable too, that the Pythagoreans adopted the practice in their society of common meals, either daily or at certain times;[4] but what later authors have said about their community of goods is certainly fabulous; and the peculiarities ascribed to them concerning dress, food, and other habits of life must be reduced to a few traits of little importance.[5] Furthermore, although the political character of the Pythagorean society is undeniable, yet the assertion[6] that its entire design was of a purely political kind, and that every other end was subordinated to this, goes far beyond any proofs deducible from history, and is neither compatible with the physical and mathematical bent of the Pythagorean science, nor with the fact that the most ancient authorities represent Pythagoras to us rather as a prophet, a wise man and a moral reformer, than as a statesman.[1] The alliance of Pythagoreanism with the Doric aristocracy seems to me the consequence and not the reason of its general tendency and view of life, and though the tradition which bids us recognise in the Pythagorean societies of Magna Græcia a *political* combination may in the main be worthy of credit, yet I find no proof that the religious, ethical, and scientific character of the Pythagoreans was developed from their political bias. The contrary seems, indeed, more probable. On the other hand, it is difficult to admit that scientific inquiry was the root of Pythagoreanism. For the moral, religious, and political character of the school cannot be explained by the theory of numbers and mathematics, in which, as we shall presently find, the distinguishing peculiarities of the Pythagorean science consisted. Pythagoreanism seems rather to have originated in the moral and religious element, which is most prominent in the oldest accounts of Pythagoras, and appears in the early Pythagorean orgies, to which also the sole doctrine which can with any certainty be ascribed to Pythagoras himself—the doctrine of transmigration—relates. Pythagoras desired to effect, chiefly by the aid of religion, a reform of the moral life; but as in Thales, the first physical speculation had connected itself with ethical reflection, so here practical ends were united with that form of scientific theory to which Pythagoras owes his place in the history of philosophy. Again, in their religious rites alone must we seek for the much talked of mysteries of the Pythagorean Society. The division of esoteric and exoteric (if this indeed existed among the ancient Pythagoreans) was purely a religious distinction. It resulted from the traditional distinction between greater and lesser initiations, between complete and preparatory consecrations.[1] That philosophic doctrines or even mathematical propositions, apart from their possible religious symbolism, should have been held secret, is in the highest degree improbable;[2] Philolaus at any rate, and the other authorities from whom Plato and Aristotle derived their knowledge of Pythagoreanism, can have known nothing of any ordinance of this nature.[3]

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[1] Iambl. 163, 264.

[2] *Rep.* iii. 405 C sqq.; *Tim.* 88 C sqq.

[3] Cf. on the medical art of the Pythagoreans and their contemporaries, Krische, *De Societ. a Pyth. Cond.* 40; *Forschungen*, &c. 72 sqq.

[4] As Krische supposes, *De Societ.* &c. 86, relying on the mutilated passage of Satyrus, ap. Diog. viii. 40; cf. Iambl. 249; vide the writers quoted, p. 343, 4, who throughout presuppose community of goods.

[5] Cf. p. 344 sqq.

[6] Krische, l. c., p. 101, concludes thus: *Societatis (Pythagoricae) scopus fuit mere politicus, ut lapsam optimatium potestatem non modo in pristinum restitueret, sed firmaret amplificaretque; cum summo hoc scopo duo conjuncti fuerunt, moralis alter, alter ad literas spectans. Discipulos suos bonos probosque homines reddere voluit Pythagoras et ut civitatem moderantes potestate sua non abuterentur ad plebem opprimendam, et ut plebs, intelligens suis commodis consuli, conditione sua contenta esset. Quoniam vero bonum sapiensque moderamen (non) nisi a prudente literisque exculto viro exspectari licet, philosophiae studium necessarium duxit Samius iis, qui ad civitatis clavum tenendum se accingerent.*

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[1] Vide *supra*, texts quoted pp. 336; 346, 1; 350, 1.

The political tendency of the Pythagorean community was fatal to its material existence and to a great part of its members. The democratic movement in opposition to the traditional aristocratic institutions, which in time invaded most of the Greek States, declared itself with remarkable rapidity and energy in the populous and independent Italian colonies, inhabited by a mixed population, excited by ambitious leaders. The Pythagorean *συνέδρια* formed the centre of the aristocratic party: they therefore became the immediate object of a furious persecution which raged with the utmost violence throughout lower Italy. The meeting houses of the Pythagoreans were everywhere burnt; they themselves murdered or banished, and the aristocratic constitutions overthrown. This continued until at length, through the intervention of the Achæans, an agreement was brought about by which the remainder of the exiles were allowed to return to their homes.[1] As to the date and more precise details of this persecution, accounts differ considerably. On the one hand, Pythagoras himself is stated to have been killed[2] in it; and, on the other, it is said of certain

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[1] In regard to the later conception of the importance of this distinction, I cannot agree with Rohde (*Rh. Mus.* xxvi. 560 sq.) in explaining it from the supposed fact that after there appeared a Pythagorean philosophy the adherents of this philosophy regarded the original Pythagoreanism, which was limited to religious prescripts and observances, as merely a preparatory stage of the higher knowledge; this seems to me to be an invention of the Neo-Pythagoreans, who thus attempted to represent as the opinion of Pythagoras what they themselves had foisted upon him, and to explain away the entire silence of ancient tradition on the subject. It is only in their writings that these two classes of Pythagoreans are recognised; and it is they who, in the passages discussed p. 309, 2, declare the celebrated propositions of the Pythagoreans to be something exoteric, the true meaning of which can only be discovered by regarding them as symbols of deeper doctrines kept up as a mystery by the school, and lost from general tradition. That the true philosophy of the Pythagoreans should be represented as an occult doctrine, only imparted to a select minority even of the disciples, is quite in harmony with this tendency, which, indeed, is its most obvious explanation.

[2] So also Ritter, *Pyth. Phil.* 52 sq. &c.

[3] What Porphyry, 58, and Iamblichus, 253, 199, say in its defence, carries on the face of it the stamp of later invention. Cf. Diog. viii. 55 (*supra*, p. 315).

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[1] So much we can gather from the detailed accounts presently to be noticed, and also from the statements of Polybius, ii. 32, who says (unfortunately only incidentally, and without any mention of date): *καθ' οὓς γὰρ καιροὺς ἐν τοῖς κατὰ τὴν Ἰταλίαν τόποις κατὰ τὴν μεγάλην Ἑλλάδα τότε προσαγορευομένην ἐνέπρησαν τὰ συνέδρια τῶν Πυθαγορείων, μετὰ ταῦτα δὲ γινομένου κινήματος ὁλοσχεροῦς περὶ τὰς πολιτείας, ὅπερ εἰκὸς, ὡς ἂν τῶν πρώτων ἀνδρῶν ἐξ ἑκάστης πόλεως οὕτω παραλόγως διαφθαρέντων, συνέβη τὰς κατ' ἐκείνους τοὺς τόπους Ἑλληνικὰς πόλεις ἀναπλησθῆναι φόνου καὶ στάσεως καὶ παντοδαπῆς ταραχῆς.* On this rests the assertion that the Achæans united Crotona, Sybaris, and Caulonia in a league and convention, and thus introduced their constitution into those cities.

[2] The various accounts are these: 1st, according to Plut. *Stoic. Rep.* 37, 3, p. 1051; Athenag. *Supplic.* c. 31; Hippolyt. *Refut.* i. 2, *sub fin.*; Arnob, *Adv. Gent.* i. 40; *Schol. in Plat.* p. 420, Bekk. and a passage in Tzetz. *Chil.* xi. 80 sqq., Pythagoras was burned alive by the Crotoniates. Hippolytus adds that Archippus, Lysis, and Zamolxis escaped from the

Pythagoreans of the fourth and fifth centuries that they had escaped from the persecution. Crotona is most

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conflagration, and Plutarch's words seem to admit the possibility that he only meant an attempt at burning. 2. Nearest to this comes the account of Diog. viii. 39, that Pythagoras and his people were in the house of Milo when the enemy set fire to it; that he escaped indeed, but was intercepted in his flight, and killed; the greater number of his friends (forty of them) were also put to death: only a few, among whom were Archippus and Lysis, escaped. 3. According to Porph. 57 and Tzetz. *loc. cit.*, others think that Pythagoras himself escaped from the attack in Crotona to Metapontum, his disciples making a bridge through the fire for him with their bodies; and all, except Lysis and Archippus, being destroyed; that he there starved himself to death, being weary of life, as Porphyry says; or died of want, according to Tzetzes. 4. According to Dicæarchus, ap. Porph. 56 sq., and Diog. viii. 40, Pythagoras at the time of the attack on the forty Pythagoreans, was in the town, but not in the house; he fled to the Locrians, and thence to Tarentum, and was rejected by both. Proceeding to Metapontum, he there, after forty days' starvation (ἀσιτήσαντα, says Diogenes; ἐν σπάνει τῶν ἀναγκαίων διαμείναντα, says Porphyry; hence, no doubt, Tzetzes' theory), died. This view is followed by Themist. *Orat.* xxiii. p. 285 b; the account in Justin's *Hist.* xx. 4, seems also to have arisen from it; here sixty Pythagoreans are said to have been destroyed, and the remainder banished. Dicæarchus also says that more than the forty were put to death. He, like most of the other authorities, seems to mention Cylon as the author of the persecution. As to the sojourn of Pythagoras in Tarentum, Röth, ii. a. 962, refers to Claudian, *De Consul. Fl. Mall. Theod.* xvii. 157: *At non Pythagoræ monitus annique silentes famosum Oebalii luxum pressere Tarenti*; but these words apparently only attest the well-known fact that Tarentum was afterwards a chief centre of Pythagoreanism. Röth moreover makes out of *Oebalium Tarentum* a Tarentine of the name of Oebalius, whose luxurious life Pythagoras vainly attempted to regulate, which is even a greater discovery than that about the map of Europe, which the philosopher is said to have made in Tarentum (vide *supra*, p. 347, 2). 5. According to the mutually complementary accounts of Neanthes, ap. Porph. 55; of Satyrus and Heracleides (Lembus), ap. Diog. viii. 40; and of Nicomachus, ap. Iambl. 251, Pythagoras at the time of Cylon's attack was not in Crotona at all, but in Delos with Pherecydes, to tend in his illness and bury him; when on his return he found that his followers, with the exception of Archippus and Lysis, had been burned in Milo's house or slain, he betook himself to Metapontum, where (according to Heracleides, ap. Diogenem) he starved himself to death. 6. According to the account of Aristoxenus (ap. Iambl. 248 sqq.), Cylon, a tyrannical and ambitious man, being angry that Pythagoras had refused him admission into his society, commenced generally named as the place where the first decided attack was made, and Metapontum as the place where

a violent struggle with the philosopher and his followers during the last years of Pythagoras's life. In consequence of this, Pythagoras himself emigrated to Metapontum, where he died; but the struggle continued, and after the Pythagoreans had maintained themselves for some time longer at the head of the states, they were at last attacked at Crotona during a political consultation in the house of Milo, and all, except the two Tarentines, Archippus and Lysis, were destroyed by fire. Archippus retired to his native city, and Lysis to Thebes; the rest of the Pythagoreans, with the exception of Archytas, abandoned Italy and lived together in Rhegium (which, however, is also in Italy), until the school, as the political conditions became worse and worse, gradually died out. (The confusion at the end of this account Rohde, *Rh. Mus.* xxvi. 565, explains by an inversion, which commends itself equally to me. The true meaning is that the Pythagoreans lived at first together in Rhegium, but when things became worse, they, with the exception of Archytas, left Italy.) This was the account which Diodorus, *Fragm.* p. 556, had before him, as appears from a comparison with Iambl. 248, 250. Apollonius, *Mirab.* c. 6, makes Pythagoras fly to Metapontum before the attack which he foretold. In Cic. *Fin.* v. 2, we are told that the dwelling of Pythagoras and the place of his death were shown in Metapontum; in Valer. Max. viii. 7, ext. 2, that the whole city of Metapontum attended the funeral of the philosopher with the deepest reverence; in Aristid. Quint. *De Mus.* iii. 116 Meib. that Pythagoras before his death recommended the use of the monochord to his disciples. These accounts agree best with the present version, as they all presuppose that the philosopher was not personally threatened up to the time of his death, and when Plut. *Gen. Socr.* 13, p. 583, speaks of the expulsion of the Pythagoreans from various cities, and of the burning of their house of assembly in Metapontum, on which occasion only Philolaus and Lysis were saved—though Metapontum is substituted for Crotona, and Philolaus for Archippus—the silence in regard to Pythagoras himself, and the placing of the whole persecution in the period after his death, are both in accordance with the statements of Aristoxenus. So Olympiodorus *in Phæd.* p. 8 sq. mentions the Pythagoreans only, and not Pythagoras, as having been burned; Philolaus and Hipparchus (Archippus) alone, he says, escaped. 7. The account of Apollonius, ap. Iambl. 254 sqq., resembles that of Aristoxenus. According to this, the Pythagorean aristocracy very early excited dissatisfaction; after the destruction of Sybaris and the death of Pythagoras (not merely his departure: ἐπεὶ δὲ ἐτελεύτησεν, it is said, and in connection with ἐτελεύτησεν, the previous ἐπεδήμει and ἀπῆλθε are to be explained), this dissatisfaction was stirred up by Cylon and other members of noble families not belonging to the society, and on the partition of the conquered

Pythagoras died; but there are so many discrepancies as to details, that a complete reconciliation of the various statements is impossible. What is most probable is that the first public outbreak must have taken place after the death of Pythagoras, though an opposition to him and his friends may perhaps have arisen during his lifetime, and caused his migration to Metapontum. The party struggles with the Pythagoreans, thus begun, may have repeated themselves at different times [1] in the cities of Magna Græcia, and the variations in the statements may be partially accounted for as recollections of these different facts. The burning of the assembled Pythagoreans in Crotona and the general assault upon the Pythagorean party most likely did not take place until the middle of the fifth century; and, lastly, Pythagoras may have spent the last portion of his life unmolested in Metapontum.[2]

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lands broke out into open hostility. The Pythagoreans were dispersed during one of their assemblies, then defeated in combat, and after ruinous disturbances, the whole Pythagorean party was driven out of three neighbouring cities by the judges, who had been corrupted, and a distribution of lands and remission of debts was decreed. Not till after many years did the Achæans accomplish the return of the exiles, of whom about sixty came back; but even these fell in an unfortunate encounter with the Thurians. 8. Lastly, Hermippus (ap. Diog. viii. 40; cf. *Schol. in Plat. loc. cit.*), differing from all other accounts, says that Pythagoras was with his friends, fighting at the head of the Agrigentines against the Syracusans, and was killed in flight, while the remainder of the Pythagoreans, to the number of thirty-five, were burned in Tarentum.

[1] As is now generally supposed, according to Bockh. *Philol.* 10.

[2] The above suppositions are chiefly based on the following grounds: Firstly, by far the greater number, and the most creditable authorities, maintain that Pythagoras died in Metapontum (cf. Iambl. 248); and even those who place the burning of the house in Crotona in his life-time, for the most part assert that he himself escaped. Although it is clear from the contradictoriness of these latter statements that no universally accepted tradition existed at the time, yet the fact itself that Pythagoras fled to Metapontum

It was only after the dispersion of the Italian associations, and in consequence of this dispersion that the

must have been pretty firmly established, since the most improbable expedients were resorted to by the authors of these statements to reconcile it with their other theories. Other accounts say that he was put to death in Crotona or Sicily, but this is no doubt an instance of what so often happens in regard to Pythagoras—that facts about his school, or a portion of his school, are transferred to him personally. Secondly, the occasion of Pythagoras's retreat to Metapontum could not have been the incendiary attack on the assembly at Crotona; the attack must have occurred many years after his death. Aristoxenus and Apollonius say this expressly. Aristoxenus, however, is the authority whom we should most expect to reproduce the Pythagorean tradition of his time. With what right Apollonius appeals in section 262 to τὰ τῶν Κροτωνιατῶν ὑπομνήματα, we do not know. If even any work that might be so designated were within his reach, the designation might apply to any Crotoniate writing whatsoever. Röth, however, thinks it manifestly implies 'contemporary records,' and he deduces from them, not only the somewhat unimportant point for which they were cited, but the whole narrative of Apollonius. Moreover, the different accounts assert with singular unanimity that only Archippus and Lysis escaped from the massacre; and as this is maintained even by those who place that event in the lifetime of Pythagoras, it must, at any rate, be based on an ancient and universal tradition. Now Lysis, at an advanced age, was the instructor of Epaminondas (Aristox. ap. Iambl. 250; Diodor. *loc. cit.*; Neanthes, ap. Porph. 55; Diog. viii. 7; Plut. *Gen. Socr.* 13; Dio Chrysos. *Or.* 49, p. 248; R. Corn. Nepos. *Epam.* c. 1), and the birth of Epaminondas cannot be supposed earlier than 418–420 B.C.; not only because he fought vigorously at Mantinea in 362, but also because Plut. *De Lat. Viv.* 4, 5, p. 1129, names his fortieth year as the period at which he began to be important, and this period (according to *Vit. Pelop.* c. 5, end, c. 12; *De Gen. Socr.* 3, p. 576) could not have been before 378 B.C., the deliverance of Thebes. Supposing Lysis to have been fifty years older than his pupil, we thus arrive at 468–470 B.C. as the earliest date of his birth, and the attack in Crotona could scarcely, even in that case, have occurred before 450 B.C. It is more probable, however, that the difference between the ages of Lysis and Epaminondas was not so great (according to Plut. *Gen. Socr.* 8, 13, Lysis died shortly before the deliverance of Thebes), and that the Crotonian massacre must be placed about 440 B.C., or even later. The statement of Aristoxenus about Archytas and that of Apollonius—that a portion of the Pythagoreans, who had been expelled from Crotona, returned after the reconciliation effected by the Achæans—points to some such date. For although, according to Polyb. ii. 39, 7, the attacks of Dionysius the Elder (who came to the throne in 406) left the three Italian cities

Pythagorean philosophy became more widely known in Greece, although the Pythagorean rites had previously

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(Crotona, Sybaris, and Caulonia) no opportunity for the consolidation and maintenance of the new institutions borrowed from the Achæans some time (*μετά τινας χρόνους*) after the adjustment of the Pythagorean troubles—yet the Achæan mediation could scarcely have occurred earlier than from ten to fifteen years previous to the end of the Peloponnesian war; but Polybius himself seems to assume that the troubles to which the burning of the Pythagorean houses gave the signal, were not very distant chronologically from the intervention of the Achæans. It matters not that the Pythagorean assembly which was burned is universally placed in the house of Milo, and that the authors of the deed are also called by Aristoxenus Cylonians; for Milo's house may have remained the meeting place of the Pythagoreans after the death of its owner, as Plato's garden was that of the Academy; and 'Cylonians' seems, like Pythagoreans, to have been a party name, which survived the chief from whom it was derived; cf. Aristox. *loc. cit.* 249. Thirdly. It is nevertheless probable that before the death of Pythagoras, a party adverse to the Pythagoreans was formed by Cylon in Crotona, which party may have been strengthened mainly by the demand for a division of the conquered lands, and by the victorious conflict with the Sybarites; and that this disturbance may have determined Pythagoras to remove to Metapontum. This is admitted by Aristoxenus and Apollonius, though the former makes the burning of Milo's house take place an indefinite time after the death of Pythagoras; and the latter, instead of the burning, relates another incident in the time of Cylon. Even Aristotle (ap. Diog. ii. 446, cf. viii. 49) incidentally mentions Cylon's enmity against Pythagoras, which had become proverbial. These earlier conflicts, however, cannot have occasioned the overthrow of the Pythagoreans in Lower Italy. This can only have happened (even according to Polybius) when the burning of the council house in Crotona gave the signal for similar acts in other places, and a universal storm broke out against the Pythagoreans. When, therefore, Aristoxenus says that the Pythagoreans kept the lead of public affairs in the cities of Magna Græcia for some time after the first attack upon them, there is every reason for crediting the statement. Fourthly. If the first popular movement against the Pythagoreans was confined to Crotona, and if they finally maintained themselves there, it is not probable that Pythagoras, contrary to the principles of his school, should have starved himself to death, or even have died of hunger. It rather seems as if, even in Aristotle's time, tradition had been silent as to the particular circumstances of his death, and that the lacuna was subsequently filled by arbitrary conjectures; so that Aristoxenus is here most worthy of credit, when he restricts himself to the remark: *κἀκεῖ λέγεται καταστρέψαι τὸν βίον*. Chaignet i. 94, objects to the foregoing that gained entrance there,[1] and certain individuals had turned their attention to the philosophic doctrines of the school.[2] At this period, at all events, we first hear of Pythagorean writings[3] and of Pythagoreans who lived elsewhere than in Italy. The first of these with whom we are acquainted, is Philolaus.[4] We know that he was a contemporary of Socrates and Democritus, and probably was older than either; that in the last decade of the fifth century he resided in Thebes,[5] and that he

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if the Pythagoreans had been banished from Italy for seventy years, they would not have been called the Italian philosophers (vide *supra*, p. 338, 1). I know not with what eyes he can have read a discussion, which expressly attempts to show that the Pythagoreans were not expelled till 440, and returned before 406.

[1] Vide *supra*, p. 346, 1.

[2] Vide the expression of Heracleitus, quoted p. 336, 5, and the assertions of Thrasyllus, Glaucus, and Apollodorus, ap. Diog. ix. 38, according to which Democritus was acquainted with Philolaus, that he spoke with admiration of Pythagoras in a treatise called after him, and, in general, had made industrious use of the Pythagorean doctrines. Democritus, however, was certainly younger than Philolaus, and it is doubtful how far Heracleitus had knowledge of Pythagoras as a philosopher. His words seem rather to refer to the founder of the religious association. He charges Pythagoras with κακοτεχνίη; and the συγγραφαί, from which he is said to have gained his false wisdom, may either mean Orphic hymns, or the ancient mythological poems, of which Heracleitus generally speaks so slightingly; or, at any rate, the writings of Pherecydes and Anaximander. The passage concerning Pythagoras and his universal knowledge perhaps stood in the same connection as the polemic against the ancient poets.

[3] Vide *supra*, p. 313.

[4] For Archippus, who is represented in Hieron. *c. Ruf.* iii. 469, Mart. (vol. ii. 565, Vall.) as teaching with Lysis in Thebes, was a somewhat younger contemporary of Lysis. The statement seems to have arisen from the two names being elsewhere mentioned together; for all other authorities agree that Archippus returned to Tarentum after the conflagration in Crotona, and that Lysis went alone to Thebes. Vide the passages quoted *supra*, p. 357, 2.

[5] Plato, *Phædo*, 61 D; Diog. *loc. cit.* Diog, viii. 84, names Crotona as the native city of Philolaus; all other authorities, Tarentum. Cf. Böckh, *Philol.* p. 5 sqq., where the erroneous statements that he escaped from the fire in Crotona (Plut. *Gen. Socr.* 13, vide *supra*, p. 359); that he was the instructor of Plato (Diog. iii. 6), and a personal pupil of Pythagoras

was the author of the first exposition of the Pythagorean system.[1] Lysis must also have come to Thebes about the same time as Philolaus, and probably resided there up to the second decade of the fourth century.[2] Plato[3] assigns Timæus the Locrian to the same period, but it is not certain whether or not this Timæus was a historical personage. Among the disciples of Philolaus is mentioned Eurytus,[4] of Tarentum or Crotona, who must also be supposed to have spent a part of his life out of Italy, since those of his pupils who are known to us came, one of them from Thrace, the others from Phlius.[5] These scholars of Eurytus are called by Aris-

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(Iambl. *V. P.* 104), with others of a similar kind, are refuted. According to Diog. viii. 84, Philolaus was put to death in Crotona on suspicion of aiming at the Tyranny. He must, therefore, have returned to Italy, and become implicated in the final party conflicts with the Pythagoreans.

[1] Cf. *supra*, pp. 313; 314, 2; and Böckh, Philol. p. 18 sqq., who rightly contests the assertion that the work of Philolaus was first brought to light by Plato. Preller (*Allg. Encycl.* iii. Sect. vol. xxiii. 371), at any rate, does not convince me of the contrary. The result of Böckh's enquiry, p. 24 sqq., is, that the work bore the title περὶ φύσεως, that it was divided into three books, and is identical with the writing to which Proclus gives the mystical name of βάκχαι.

[2] Cf. p. 361, and Iambl. *V. P.* 185; ibid. 75 sqq.; Diog. viii. 42, a portion of a letter said to be his. Further details as to the writings attributed to him, p. 322, Part iii. b, 37, second edition.

[3] In the Timæus and Critias; cf. especially Tim. 20 A.

[4] Iambl. 139, 148, calls him a scholar of Pythagoras. He also, in section 148, names Crotona as his native city; in section 67, however, agreeing with Diog. viii. 46; Apul. *Dogm. Plat.* (*sub init.*); Tarentum; section 266 represents him, together with a certain Thearides, as living in Metapontum; this statement, however, stands in a very doubtful connection. Diog. iii. 6, and Apul. *loc. cit.* mention him among the Italian instructors of Plato. Some tenets of his will be mentioned further on. The fragments in Stob. *Ecl.* i. 210, and Clem. *Strom.* v. 559 D, do not belong to him, but to an imaginary Eurysus, and are no doubt spurious.

[5] We know little more of them than what is said in Diog. viii. 46 (cf. Iambl. *Vita Pythag.* 251): τελευταῖοι γὰρ ἐγένοντο τῶν Πυθαγορείων οὓς καὶ Ἀριστόξενος εἶδε, Ξενόφιλός θ' ὁ Χαλκιδεὺς ἀπὸ Θρᾴκης καὶ Φάντων ὁ Φλιάσιος καὶ Ἐχεκράτης καὶ Διοκλῆς καὶ Πολύμναστος, Φλιάσ-

toxenus the last of the Pythagoreans, and he says that with them the school, as such, became extinct.[1] The school, according to this, must have died out in Greece proper soon after the middle of the fourth century, though the Bacchic Pythagorean rites may have continued[2] to exist some time longer, and may have furnished a pretext to Diodorus of Aspendus,[3] for designating his cynicism as Pythagorean Philosophy.

Even in Italy, however, the Pythagorean school was not annihilated by the blow which destroyed its political ascendency. · Though the persecution may have extended to most of the Greek colonies, it can hardly

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ιοι καὶ αὐτοί. ἦσαν δ' ἀκροαταὶ Φιλολάου καὶ Εὐρύτου τῶν Ταραντίνων. Of Xenophilus we are told (Plin. *Hist. Nat.* vii. 50, 168; Valer. Max. viii. 13, 3; Lucian, *Macrob.* 18) that he attained the age of 105 in perfect health. The two last authorities appeal to Aristoxenus in support of this statement. Pliny and the Pseudo-Lucian call Xenophilus the musician; according to the latter, he lived in Athens. Echecrates is the same person who is mentioned in the *Phædo* and in the ninth Platonic letter. Cic. *Fin.* v. 29, 87, wrongly calls him a Locrian, cf. Steinhart, *Plato's Werke*, iv. 558.

[1] Vide previous note, and Iambl. *loc. cit.*: ἐφύλαξαν μὲν οὖν τὰ ἐξ ἀρχῆς ἤθη καὶ τὰ μαθήματα, καίτοι ἐκλειπούσης τῆς αἱρέσεως ἕως ἐντελῶς ἠφανίσθησαν. ταῦτα μὲν οὖν Ἀριστόξενος διηγεῖται. Diodor. xv. 76. The last Pythagorean philosophers lived in the third year of the 103rd Olympiad (366 B.C.).

[2] As will be shown later on.

[3] This Diodorus, who came from the city of Aspendus, in Pamphylia, is mentioned by Sosicrates, ap. Diog. vi. 13, as the inventor of the Cynic garb, or, as Athen. iv. 163, more accurately says, the person who first wore it among the Pythagoreans. With this Timæus, ap. Athen. *loc. cit.* agrees. Iambl. 266 calls him a pupil of Aresas, the Pythagorean; but this is manifestly false, as Aresas is said to have escaped from the persecution of Cylon, and Diodorus, according to Athenæus, must have lived about 300. To the same period Lyco seems to belong, who is called by Diog. (v. 69) Πυθαγορικὸς, and whose attacks upon Aristotle are spoken of by Aristocles, Eus. *Pr. Ev.* xv. 2, 4 sq. The latter says of him, Λύκωνος τοῦ λέγοντος εἶναι Πυθαγορικὸν ἑαυτόν, and includes him among those adversaries of Aristotle who were contemporary with him, or somewhat later. (This was overlooked, *supra*, p. 308, 1.) It is probably the same person who is called in Iambl. 267 a Tarentine.

have done so to all, and in certain cities Pythagorean teachers would seem to have maintained their position even before the restoration of peace. At all events, if the sojourn of Philolaus in Heraclea,[1] for instance, be a historical fact, it perhaps may have occurred previously to that epoch. In this same town is said to have lived Clinias the Tarentine,[2] who in any case was no doubt a near contemporary of Philolaus.[3] As to his philosophical importance, we can decide nothing. Many proofs have come down to us of the purity, gentleness, and nobility of his character;[4] but we possess very few of his philosophic propositions, and these are by no means of unquestionable authenticity.[5] Prorus is mentioned as another of his contemporaries in Cyrene,[6] to which city, if this statement be true, Pythagoreanism must have spread from its original centre. In the first half of the fourth century, it even attained, in the person of Archytas,[7] to new political importance. We know little, however, with certainty concerning his scientific theories; nor can we determine how far a philosophic impulse was connected with this renewed life of the school. Soon after the period of Archytas the Pythagorean school, even in Italy, seems to have died out, or at any rate, to have been represented only by some isolated followers. Aristoxenus, at least, speaks of it as an entirely extinct phenomenon,[1] and we have no information from other sources as to the longer continuance of the school,[2] although the knowledge of its doctrines was not confined to the sages of Greece.[3]

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[1] Iambl. 266, where from the context the Italian Heraclea can alone be meant; this city was a colony from Tarentum and Thurii, founded in the fourth year of the 86th Olympiad.

[2] Iambl. 266 sq.

[3] As is presupposed by the apocryphal story in Diog. ix. 40, that he and Amyclas restrained Plato from burning the writings of Democritus.

[4] Iambl. *V. P.* 239; cf. 127, 198; Athen. xiii. 623 sq. after Chameleon; Ælian. *V. H.* xiv. 23; Basil. *De Leg. Græc. libr.* Opp. ii. 179 d (*Serm.* xiii.; Opp. iii. 549 c.); cf. note 3.

[5] The two fragments of an ethical character in Stob. *Floril.* i. 65 sq. are evidently spurious, as may be seen from the mode of expression. So no doubt is the statement about the One in Syrian, on *Metaph. Schol. in Ar.* 927 a, 19 sqq. A small fragment, which we find in Iambl. *Theol. Arithm.* 19, bears no definite mark of being spurious; but, on the other hand, its authenticity cannot be demonstrated. Lastly, Plut. *Qu. Conv.* iii. 6, 3, is a passage of small importance, whether genuine or not.

[6] According to Diodorus, *Fragm.* p. 554, Wess., Clinias, learning that Prorus had lost his property, journeyed to Cyrene to the relief of this brother Pythagorean, who was personally unknown to him.

[7] What we know of his life is

Besides those Pythagoreans we have spoken of,

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limited to a very few statements. Born in Tarentum (Diog. viii. 79, &c.), a contemporary of Plato and of Dionysius the younger (Aristox. ap. Athen. xii. 545 a; Diog. *loc. cit.*; Plato, *Ep.* vii. 338 c), said to be Plato's instructor (Cic. *Fin.* v. 29, 87; *Rep.* i. 10; *Cato*, 12, 41); according to another equally untrustworthy account (vide *supra*, 320, 4) his pupil—he was equally great as a statesman (Strabo, vi. 3, 4, p. 280: προέστη τῆς πόλεως πολὺν χρόνον; Athen. *loc. cit.*; Plut. *Præc. Ger. Reip.* 28, 5, p. 821; Æl. *V. H.* iii. 17; Demosth. *Amator.* vide *supra*, p. 320, 4) and as a general (Aristox. ap. Diog. viii. 79, 82, vide *supra*, p. 321, 2; Ælian, *V. H.* vii. 14). He distinguished himself in mathematics, mechanics, and harmony (Diog. viii. 83; Horat. *Carm.* i. 28; Ptolem. *Harm.* i. 13; Porph. *in Ptol. Harm.* 313; Proclus *in Euc.* 19 [66 Friedl. after Eudemus]; Apul. *Apol.* p. 456; Athen. iv. 184 e), of a noble and well balanced character (Cic. *Tusc.* iv. 36, 78; Plut. *Ed. Puer.* 14, p. 10; *Des. Num. Vind.* 5, p. 551; other particulars ap. Athen. xii. 519 b; Æl. xii. 15; xiv. 19; Diog. 79). His death by drowning is well known from Horace. As to his writings, vide *supra*, p. 320 sqq., and Part iii. b, 88 sqq., second edition.

[1] Vide *supra*, p. 364, 4.

[2] For Nearchus the Tarentine, to whom Cato (ap. Cic. *Cato*, 12, 41) refers the tradition of a discourse of Archytas against pleasure, is probably an imaginary person, and is not even called by Cicero a Pythagorean. It is Plutarch who, in repeating Cicero's statement (*Cato Maj.* c. 2) first so describes him. This discourse, the pendant to the hedonistic discourse which Aristoxenus, ap. Athen. xii. 545 b sqq., puts into the mouth of Polyarchus in the presence of Archytas, no doubt arose, either directly or indirectly, out of this passage of Aristoxenus.

[3] Vide *infra*, Part iii. b, 68 sq., second edition.

many others are named in the confused and ill-arranged catalogue of Iamblichus,[1] and elsewhere. But several of these names evidently do not belong to the Pythagoreans at all; others have possibly been introduced by subsequent interpolators; and all are worthless for us, because we know nothing further about the men they designate. There are, however, some few men who are connected with the Pythagorean school, but do not properly belong to it, whom we shall have to notice later on.

III. *THE PYTHAGOREAN PHILOSOPHY; ITS FUNDAMENTAL CONCEPTIONS; NUMBER AND THE ELEMENTS OF NUMBER.*

In order to estimate rightly the philosophy of the Pythagoreans, it is of the highest importance that we should distinguish in their doctrines and institutions that which is philosophical in the narrower sense from that which has arisen from other sources and motives. The Pythagoreans constitute primarily not a scientific, but a moral, religious, and political association;[2] and though a definite tendency of philosophic thought was developed in this association at an early period, and probably by its very founder, yet its members were not all philosophers, nor were all the doctrines and opinions which they entertained the result of philosophic enquiry. On the contrary, many of these may have arisen independently of such enquiry, and may have related to objects with which the Pythagorean philosophy never concerned itself. Although, therefore, in considering these doctrines and opinions, we ought not to lose sight of their possible connection with the purely philosophic doctrines, yet we must not reckon all that is Pythagorean as belonging to the Pythagorean *Philosophy*. As well might we regard all that is Hellenic as Greek philosophy, or all that is to be found among Christian peoples as Christian philosophy. We have consequently to enquire in each particular case how far any Pythagorean doctrine is philosophic as to its content, that is, how far it may or may not be explained by the philosophic character of the school.

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[1] *Vit. Pyth.* 267 sqq.

[2] Vide *supra*, 352 sq. The name 'Pythagoreans' or 'Pythagorici' seems to have been originally, like Cylonists or Orphici, a party designation of a political or religious, rather than a philosophical kind, bestowed on them, perhaps, by their enemies. This seems to explain Aristotle's expression, *οἱ καλούμενοι Πυθαγόρειοι* (vide *supra*, p. 307, 2), cf. Dicæarch. ap. Porph. 56: *Πυθαγόρειοι δ' ἐκλήθησαν ἡ συστασις ἅπασα ἡ συνακολουθήσασα αὐτῷ.*

The most generally distinctive doctrine of the Pythagorean philosophy is contained in the proposition that number is the essence of all things, that everything, in its essence, is number.[1] How we are to understand this formula, however, is a point on which our authorities are in appearance not fully agreed. On the one side, Aristotle frequently asserts that, according to the Pythagorean theory, things consist of numbers,[1] or of the elements of numbers;[2] that numbers are not merely qualities of a third substance, but immediately, and in themselves, the substance of things; and form the essence of things; yet for that very reason, do not exist apart from things, like the Platonic ideas.[3] He, therefore, in considering the relation of the Pythagorean numbers to his four kinds of causes, places them among the material, as well as the formal causes; for the Pythagoreans, he says, sought in numbers at once the matter and the qualities of things.[1] With this Philolaus in substance agrees; since he not only describes number as the law of the universe, and that which holds it together, the power that rules over gods and men, the condition of all definition and knowledge,[2] but he calls the Limit and the Unlimited, which are the two constituents of numbers, the things from which all is formed.[1] On the other hand, however, Aristotle likewise says that the Pythagoreans represent things as arising from the imitation of numbers, the manifold similarities of which with things they perceived.[2] In another place he seems to confine the immanence of numbers in things to one portion of the Pythagorean school;[3] and in later accounts the statement that all things consist of numbers, is opposed by the assertion that things are formed, not out of numbers, but after the pattern of numbers.[4] We are

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[1] Aristot. *Metaph.* i. 5: *ἐν δὲ τούτοις καὶ πρὸ τούτων οἱ καλούμενοι Πυθαγόρειοι τῶν μαθημάτων ἁψάμενοι πρῶτοι ταῦτα προήγαγον καὶ ἐντραφέντες ἐν αὐτοῖς τὰς τούτων ἀρχὰς τῶν ὄντων ἀρχὰς ᾠήθησαν εἶναι πάντων. ἐπεὶ δὲ τούτων οἱ ἀριθμοὶ φύσει πρῶτοι, ἐν τοῖς ἀριθμοῖς ἐδόκουν θεωρεῖν ὁμοιώματα πολλὰ τοῖς οὖσι καὶ γιγνομένοις, μᾶλλον ἢ ἐν πυρὶ καὶ γῇ καὶ ὕδατι, ὅτι τὸ μὲν τοιονδὶ τῶν ἀριθμῶν πάθος δικαιοσύνη, τὸ δὲ τοιονδὶ ψυχὴ καὶ νοῦς, ἕτερον δὲ καιρὸς καὶ τῶν ἄλλων ὡς εἰπεῖν ἕκαστον ὁμοίως· ἔτι δὲ τῶν ἁρμονικῶν ἐν ἀριθμοῖς ὁρῶντες τὰ πάθη καὶ τοὺς λόγους, ἐπειδὴ τὰ μὲν ἄλλα τοῖς ἀριθμοῖς ἐφαίνετο τὴν φύσιν ἀφωμοιῶσθαι πᾶσαν, οἱ δ' ἀριθμοὶ πάσης τῆς φύσεως πρῶτοι, τὰ τῶν ἀριθμῶν στοιχεῖα τῶν ὄντων στοιχεῖα πάντων εἶναι ὑπέλαβον, καὶ τὸν ὅλον οὐρανὸν ἁρμονίαν εἶναι καὶ ἀριθμόν.* Cf. *ibid.* iii. 5, 1002 a, 8: *οἱ μὲν πολλοὶ καὶ οἱ πρότερον τὴν οὐσίαν καὶ τὸ ὂν ᾤοντο τὸ σῶμα εἶναι . . . οἱ δ' ὕστερον καὶ σοφώτεροι τούτων εἶναι δόξαντες τοὺς ἀριθμούς.* Cf. the following note. It seems unnecessary to add to these Aristotelian passages the explanations of later writers, such as Cicero, *Acad.* ii. 37, 118, Plut. *Plac.* i. 3, 14, &c.

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[1] Vide previous note, and *Metaph.* xiii. 6, 1080 b, 16: *καὶ οἱ Πυθαγόρειοι δ' ἕνα τὸν μαθηματικὸν [ἀριθμὸν] πλὴν οὐ κεχωρισμένον, ἀλλ' ἐκ τούτου τὰς αἰσθητὰς οὐσίας συνεστάναι φασίν* (or, as in l. 2: *ὡς ἐκ τῶν ἀριθμῶν ἐνυπαρχόντων ὄντα τὰ αἰσθητά*). Vgl. c. 8, 1083 b, 11: *τὸ δὲ τὰ σώματα ἐξ ἀριθμῶν εἶναι συγκείμενα καὶ τὸν ἀριθμὸν τοῦτον εἶναι μαθηματικὸν ἀδύνατόν ἐστιν . . . ἐκεῖνοι δὲ τὸν ἀριθμὸν τὰ ὄντα λέγουσιν· τὰ γοῦν θεωρήματα προσάπτουσι τοῖς σώμασιν ὡς ἐξ ἐκείνων ὄντων τῶν ἀριθμῶν.* xiv. 3, 1090 a, 20: *οἱ δὲ Πυθαγόρειοι διὰ τὸ ὁρᾷν πολλὰ τῶν ἀριθμῶν πάθη ὑπάρχοντα τοῖς αἰσθητοῖς σώμασιν, εἶναι μὲν ἀριθμοὺς ἐποίησαν τὰ ὄντα, οὐ χωριστοὺς δὲ, ἀλλ' ἐξ ἀριθμῶν τὰ ὄντα*, whence the censure in l. 32: *ποιεῖν ἐξ ἀριθμῶν τὰ φυσικὰ σώματα, ἐκ μὴ ἐχόντων βάρος μηδὲ κουφότητα ἔχοντα κουφότητα καὶ βάρος.* i. 8, 990 b, 21: *ἀριθμὸν δ' ἄλλον μηθένα εἶναι παρὰ τὸν ἀριθμὸν τοῦτον, ἐξ οὗ συνέστηκεν ὁ κόσμος.*

[2] Vide previous note, and *Metaph.* i. 5, 987 a, 14: *τοσοῦτον δὲ προσεπέθεσαν* [*οἱ Πυθαγόρειοι*] *ὃ καὶ ἴδιόν ἐστιν αὐτῶν, ὅτι τὸ πεπερασμένον καὶ τὸ ἄπειρον καὶ τὸ ἓν οὐχ ἑτέρας τινὰς ᾠήθησαν εἶναι φύσεις, οἷον πῦρ ἢ γῆν ἤ τι τοιοῦτον ἕτερον, ἀλλ' αὐτὸ τὸ ἄπειρον καὶ αὐτὸ τὸ ἓν οὐσίαν εἶναι τούτων ὧν κατηγοροῦνται, διὸ καὶ ἀριθμὸν εἶναι τὴν οὐσίαν ἁπάντων.* Similarly *Phys.* iii. 4, 203 a, 3, of the *ἄπειρον* alone; *Metaph.* i. 6, 987 b, 22; iii. 1, 996 a, 5; *ibid.* c. 4, 1001 a, 9; x. 2 init. of the *ὂν* and the *ἕν*.

[3] *Metaph.* i. 5 (vide previous note), c. 6, 987 b, 27: *ὁ μὲν [Πλάτων] τοὺς ἀριθμοὺς παρὰ τὰ αἰσθητά, οἱ [Πυθαγόρειοι] δ' ἀριθμοὺς εἶναί φασιν αὐτὰ τὰ πράγματα . . . τὸ μὲν οὖν τὸ ἓν καὶ τοὺς ἀριθμοὺς παρὰ τὰ πράγματα ποιῆσαι καὶ μὴ ὥσπερ οἱ Πυθ.* &c. Aristotle often makes use of the same distinction to discriminate the Pythagorean doctrine from the Platonic; cf. *Metaph.* xiii. 6 (vide note 1), c. 8, 1083 b, 8; xiv. 3, 1090 a, 20; *Phys.* iii. 4, 203 a, 3.

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[1] *Metaph.* i. 5, 986 a, 15: *φαίνονται δὴ καὶ οὗτοι τὸν ἀριθμὸν νομίζοντες ἀρχὴν εἶναι καὶ ὡς ὕλην τοῖς οὖσι καὶ ὡς πάθη τε καὶ ἕξεις.* To this belongs also the passage in 986 b, 6: *ἐοίκασι δ' ὡς ἐν ὕλης εἴδει τὰ στοιχεῖα τάττειν· ἐκ τούτων γὰρ ὡς ἐνυπαρχόντων συνεστάναι καὶ πεπλάσθαι φασὶ τὴν οὐσίαν*: whether we refer these words, with Bonitz, in the first instance, to the ten oppositions previously enumerated (vide *infra*), or directly to the *στοιχεῖα τοῦ ἀριθμοῦ* (mentioned, 986 a, 17), the Uneven or Limited, and the Even or Unlimited; for the ten opposites are only the ulterior development of the fundamental opposition of the Limited and Unlimited. Aristotle probably had in his mind the passage from Philolaus, quoted p. 372, 1, as has already been observed, p. 316.

[2] Fr. 18 (Böckh, 139 sqq.) ap. Stob. *Ecl.* i. 8: *θεωρεῖν δεῖ τὰ ἔργα καὶ τὰν ἐσσίαν τῶ ἀριθμῶ καττὰν δύναμιν, ἅτις ἐντὶ ἐν τᾷ δεκάδι· μεγάλα γὰρ καὶ παντελὴς καὶ παντοεργὸς καὶ θείω καὶ οὐρανίω βίω καὶ ἀνθρωπίνω ἀρχὰ καὶ ἁγεμὼν . . . ἄνευ δὲ ταύτας πάντα ἄπειρα καὶ ἄδηλα καὶ ἀφανῆ· νομικὰ γὰρ ἁ φύσις τῶ ἀριθμῶ καὶ ἁγεμονικὰ καὶ διδασκαλικὰ τῶ ἀπορουμένω παντὸς καὶ ἀγνοουμένω παντί. οὐ γὰρ ἦς δῆλον οὐθενὶ οὐθὲν τῶν πραγμάτων οὔτε αὐτῶν ποθ' αὑτὰ οὔτε ἄλλω ποτ' ἄλλο, εἰ μὴ ἦς ἀριθμὸς καὶ ἁ τούτω ἐσσία· νῦν δὲ οὗτος καττὰν ψυχὰν ἁρμόζων αἰσθήσει πάντα γνωστὰ καὶ ποτάγορα ἀλλάλοις κατὰ γνώμονος φύσιν* (cf. Böckh, l. c.) *ἀπεργάζεται, σωματῶν καὶ σχίζων τοὺς λόγους χωρὶς ἑκάστους τῶν πραγμάτων τῶν τε ἀπείρων καὶ τᾶν περαινόντων. ἴδοις δὲ καὶ οὐ μόνον ἐν τοῖς δαιμονίοις καὶ θείοις πράγμασι τὰν τῶ ἀριθμῶ φύσιν καὶ τὰν δύναμιν ἰσχύουσαν, ἀλλὰ καὶ ἐν τοῖς ἀνθρωπικοῖς ἔργοις καὶ λόγοις πᾶσι πάντα καὶ κατὰ τὰς δαμιουργίας τὰς τεχνικὰς πάσας καὶ κατὰ τὰν μουσικάν. ψεῦδος δ' οὐθὲν δέχεται ἁ τῶ ἀριθμῶ φύσις οὐδὲ ἁρμονία· οὐ γὰρ οἰκεῖον αὐτοῖς ἐντι· τᾶς γὰρ ἀπείρω καὶ ἀνοήτω (-άτω) καὶ ἀλόγω φύσιος τὸ ψεῦδος καὶ ὁ φθόνος ἐντί*, and similarly afterwards, probably taken from another place, we read, *ψεῦδος δὲ οὐδαμῶς ἐς ἀριθμὸν ἐπιπενῖ. πολέμιον γὰρ καὶ ἐχθρὸν αὐτῶ τᾷ φύσι· ἁ δ' ἀλάθεια οἰκεῖον καὶ σύμφυτον τᾷ τῶ ἀριθμῶ γενεᾷ.* Fr. 2 (Böckh, 58) ap. Stob. i. 456: *καὶ πάντα γα μὰν τὰ γιγνωσκόμενα ἀριθμὸν ἔχοντι· οὐ γὰρ ὁτιῶν οἷόν τε οὐθὲν οὔτε νοηθῆμεν οὔτε γνωσθῆμεν ἄνευ τούτω.* With the above agrees substantially the assertion of Iamblichus, in *Nicom. Arithm.* p. 11 (ap. Böckh, p. 137), which is repeated by Syrian, *in Metaph.* (*Schol. in Ar.* 902 a, 29, 912 b, 17): *Φιλόλαος δέ φησιν ἀριθμὸν εἶναι τῆς τῶν κοσμικῶν αἰωνίας διαμονῆς τὴν κρατιστεύουσαν καὶ αὐτογενῆ συνοχήν*, but these words cannot have occurred in a genuine work of Philolaus.

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[1] Fr. 4, ap. Stob. i. 458 (Böckh, 62): ἁ μὲν ἐστὼ [= οὐσία] τῶν πραγμάτων ἀΐδιος ἔσσα καὶ αὐτὰ μὲν ἁ φύσις θείαν τε (Mein. conj. θεία ἐντὶ) καὶ οὐκ ἀνθρωπίναν ἐνδέχεται γνῶσιν πλέον (Mein. πλάν) γα, ἢ ὅτι οὐχ οἷόν τ' ἦς οὐθενὶ τῶν ἐόντων καὶ γιγνωσκομένων ὑφ' ἁμῶν γνωσθῆμεν, μὴ ὑπαρχούσας αὐτᾶς [τῆς ἁρμονίας] ἐντὸς τῶν πραγμάτων ἐξ ὧν ξυνέστα ὁ κόσμος τῶν τε περαινόντων καὶ τῶν ἀπείρων (according to Böckh's correction). Meineke reads μὴ ὑπαρχοίσας τᾶς ἐστυῦς τῶν πραγμάτων, and Rothenbücher. *System des Pythag.* p. 72, founds upon the absurdity of this merely conjectural reading, a proof of the unauthenticity of the fragment. In the commencement of the fragment the words αὐτὰ μὲν ἁ φύσις are not very good sense, and even Meineke's amendment, μόνα ἁ φύσις, does not satisfy me. I would sooner (as already observed in Hermes, x. 188) discard the μὲν as a repetition of the words before ἐστώ, but it would be better still to read ἀΐδιος ἔσσα καὶ ἀεὶ ἐσομένα φύσις: the essence of things, as a nature which is eternal and which will always exist, is divine.

[2] *Metaph.* i. 6, 987 b, 10, concerning Plato, τὴν δὲ μέθεξιν (the participation of things in the Ideas) τοὔνομα μόνον μετέβαλεν· οἱ μὲν γὰρ Πυθαγόρειοι μιμήσει τὰ ὄντα φασὶν εἶναι τῶν ἀριθμῶν, Πλάτων δὲ μεθέξει τοὔνομα μεταβαλών. Aristoxenus, ap. Stob. i. 16: Πυθαγόρας . . . πάντα τὰ πράγματα ἀπεικάζων τοῖς ἀριθμοῖς. Cf. the expressions, ὁμοιώματα and ἀφομοιοῦσθαι in the passage quoted above from *Metaph.* i. 5. and the ἀριθμῷ δέ τε πάντ' ἐπέοικεν, ap. Plut. *De An. Procr.* 33, 4, p. 1030; Theo. Mus. c. 38; Sext. *Math.* iv. 2; vii. 94, 109; Iambl. *V. Pyth.* 162; Themist. *Phys.* 32 a (220, 22 Sp.); Simpl. *De Cœlo*, 259 a, 39 (*Schol. in Arist.* 511 b, 13).

[3] *De Cœlo*, iii. 1 sub. fin.: ἔνιοι γὰρ τὴν φύσιν ἐξ ἀριθμῶν συνιστᾶσιν ὥσπερ τῶν Πυθαγορείων τινές.

[4] Theano, ap. Stob. *Ecl.* i. 302: συχνοὺς μὲν Ἑλλήνων πέπεισμαι νομίσαι φάναι Πυθαγόραν ἐξ ἀριθμοῦ πάντα φύεσθαι . . . ὁ δὲ [so Heeren] οὐκ ἐξ ἀριθμοῦ κατὰ δὲ ἀριθμὸν ἔλεγε πάντα γίγνεσθαι, etc. The pseudo-Pythagoras is represented

also informed that the Pythagoreans distinguished between numbers and the things numbered, and especially between Unity and the One.[1] From this it has been inferred that they developed their doctrine of numbers in different directions; one division of the school holding numbers to be the inherent ground of things, and another seeing in them merely prototypes.[2] Aristotle, however, gives no countenance to such a theory. In his work on the heavens, indeed, he is only speaking of a portion of the Pythagoreans when he says they made the world to consist of numbers; but it does not follow that the rest of the school explained the world in a different way. He may very possibly have expressed himself in this manner, because all theories of numbers were not developed into a construction of the universe,[3] or because the name of Pythagoreans denoted others besides the Pythagorean philosophers,[4] or because he himself had access to the cosmological writings of some only among these philo-

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as saying the same thing in the ἱερὸς λόγος, vide Iambl. *in Nicom. Arithm.* p. 11, and Syrian *in Metaph.* (*Schol. in Ar.* 902 a, 24), when he describes number as the ruler of forms and ideas, the standard and the artistic faculty by which the Deity created the world, the primitive thought of the Deity. Vide also Hippasus (whose doctrine on this point is not opposed to that of Pythagoras, as was maintained after Brandis, in the first edition of this work, i. 100; iii. 515; but is treated as a development of it); ap. Iambl. *loc. cit.*; Syn. *Schol. in Ar.* 902 a, 31, 912 b, 15; Simpl. *Phys.* 104 b, when he calls number παράδειγμα πρῶτον κοσμοποιΐας and κριτικὸν κοσμουργοῦ θεοῦ ὄργανον.

[1] Moderatus, ap. Stob. *Ecl.* i. 20; Theo. *Math.* c. 4. Further details later on.

[2] Brandis, *Rhein. Mus. v. Niebuhr und Brandis*, ii. 211 sqq.; *Gr. Rom. Phil.* i. 441 sqq.; Hermann, *Geschich. und Syst. d. Plat.* i. 167 sq., 286 sq.

[3] He does not really say that only a portion of the Pythagoreans made things to consist of numbers, but: ἔνιοι τὴν φύσιν ἐξ ἀριθμῶν συνιστᾶσι, or as it stands previously: ἐξ ἀριθμῶν συντιθέασι τὸν οὐρανόν.

[4] Vide *supra*, p. 369.

sophers.[1] But he elsewhere attributes both doctrines—viz., that things consist of numbers, and that they are copied from numbers—to the Pythagoreans generally; and the two statements appear not in widely separated passages, but in such close juxtaposition, that if they had been in his opinion irreconcilable, their contradictoriness could not possibly have escaped him. *Because* the Pythagoreans discovered many similarities between numbers and things, he says (*Metaph.* i. 5; xiv. 3) they held the elements of numbers to be the elements of things; they perceived in number (he adds in the same chapter) both the matter and the qualities of things; and in the same place that he ascribes to them the doctrine of the imitation of things by numbers, *Metaph.* i. 6, he asserts that they differed from Plato in considering numbers, not as Plato did the ideas as separate from things, but as the things themselves. From this it is evident that the two statements 'numbers are the substance of things,' and 'numbers are the prototypes of things,' do not, in Aristotle's opinion, exclude one another;[2] the Pythagoreans, according to his representation, considered things to be the copies of numbers, for the very reason that numbers are the essence of which things consist, and the properties of which must therefore be cognisable in them. Philolaus places number in this same relation to things when he describes it (*loc. cit.*) as their law and the cause of their properties and relations; for there is the same relation between law and its fulfilment as between prototype and copy. Later writers, indeed, conceive the Pythagorean numbers entirely after the manner of the Platonic ideas—as models external to things. There are traces, however, even among those writers of the contrary opinion.[1] But we cannot attach much importance to the testimony of persons who are evidently unable to distinguish earlier theories from later, or the Pythagorean doctrines from those of the Platonists and Neo-Pythagoreans.[2]

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[1] Aristotle is fond of employing limitations and guarded expressions. Thus we continually find *ἴσως* and similar words where he is giving utterance to his most decided opinions (e.g. *Metaph.* viii. 4, 1044 b, 7); and the same is the case with *ἔνιοι*, when he says, for instance, *De Gen. et Corr.* ii. 5 init.: *εἰ γάρ ἐστι τῶν φυσικῶν σωμάτων ὕλη, ὥσπερ καὶ δοκεῖ ἐνίοις, ὕδωρ καὶ ἀὴρ καὶ τὰ τοιαῦτα*, or, as in *Metaph.* i. 1, 981 b, 2: *τῶν ἀψύχων ἔνια ποιεῖν μὲν, οὐκ εἰδότα δὲ ποιεῖν ἃ ποιεῖ.* As we cannot infer from these words that Aristotle believed some lifeless things to act with consciousness, neither does it follow from the passage in *De Cælo* that some Pythagoreans made the world to consist of something other than numbers.

[2] Thus in *Metaph.* i. 5 (to which Schwegler in his commentary on this passage rightly calls attention), the conception of the *ὁμοίωμα* itself is transferred to the corporeal elements, for it is said the Pythagoreans thought they observed in numbers many simi-

The meaning of the Pythagorean fundamental doctrine then is this:—All is number, *i.e.*, all consists of numbers; number is not merely the form by which the constitution of things is determined, but also the

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larities to things, *μᾶλλον ἢ ἐν πυρὶ, γῇ καὶ ὕδατι*, and on the other hand, Aristotle (*Phys.* ii. 3, 194 b, 26) calls the Form which he regards as the immanent essence of things, *παράδειγμα*.

[1] Theo, for example, *loc. cit.* p. 27, remarks on the relation of the Monad to the One: *Ἀρχύτας δὲ καὶ Φιλόλαος ἀδιαφόρως τὸ ἓν καὶ μονάδα καλοῦσι καὶ τὴν μονάδα ἕν.* Also Alexander (ad *Metaph.* i. 5, 985 b, 26, p. 29, 17. Bon.) presupposes the same when he says of the Pythagoreans: *τὸν νοῦν μονάδα τε καὶ ἓν ἔλεγον*; and concerning the Ideas, Stob. *Ecl.* i. 326, asserts that Pythagoras sought them in numbers and their harmonies, and in geometric proportions, *ἀχώριστα τῶν σωμάτων*.

[2] For this reason I consider it unnecessary to discuss the manifestly incorrect statements of Syrian and Pseudo-Alexander in regard to *Metaph.* xiii., xiv., which continually confuse the Pythagoreans and Platonists. In xiii. 1, indeed, they call the theory of Ideas, as well as the Xenocratic distinction of the Mathematical sphere and the Sensible, Pythagorean.

substance and the matter of which they consist. It is one of the essential peculiarities of the Pythagorean standpoint that the distinction of form and matter is not as yet recognised. *We* regard numbers only as an expression for the relation of substances, they directly seek in them the essence and substance of the real. The Pythagoreans (as we are told by Aristotle,[1] and also by Philolaus[2]) were doubtless led to this theory by perceiving that all phenomena are ordered according to numbers; that especially the relations of the heavenly bodies, and of tones, and, generally speaking, *all* mathematical conceptions, are governed by certain numbers and numerical proportions. This observation is itself connected with the ancient use of symbolic round numbers, and with the belief in the occult power and significance of particular numbers,[3] which belief was current among the Greeks as among other nations, and probably existed from the very commencement in the Pythagorean mysteries. But as Plato subsequently gave substance to the Idea—as the Eleatics made the real, which was at first conceived as a predicate of all things, the sole and universal substance—so by virtue of the same realism, which was so natural to antiquity, the Pythagoreans regarded mathematical, or more accurately, arithmetical determinations, not as a form or a quality of things, but as their whole essence, and without any discrimination or restriction, said generally :—All is number. This is a mode of presentation which sounds strangely enough to us; if, however, we consider how great an impression must have been produced upon the receptive mind by the first perception of a universal, and unalterable mathematical order in phenomena, we shall better understand how number came to be reverenced as the cause of all order and definiteness; as the ground of all knowledge; as the divine power that rules in the world; and how thought accustomed to move, not in the sphere of abstract conceptions, but in that of intuitions, could hypostasise number, as the substance of all things.

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[1] *Metaph.* i. 5, xiv. 3, vide *supra*, p. 369, 1, 370, 1.

[2] Vide the passages quoted p. 370 sq. Further particulars hereafter.

[3] In proof of this we need only call to mind the importance of the number seven (so celebrated among the Pythagoreans), especially in the cult of Apollo (vide Preller, *Mythol.* i. 155); the many triple orders in the mythology—Hesiod's exact prescripts concerning lucky and unlucky days of the year (Ἐρ. καὶ ἡμ., 763 sqq.); Homer's preference for certain numbers, and the like, mentioned in Ps. Plut. *V. Hom.* 145.

All numbers are divided into odd and even, to which, as a third class, the even-odd (ἀρτιοπέρισσον) is added,[1] and every given number can be resolved either into odd or even elements.[2] From this the

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[1] Philol. *Fr.* 2. ap. Stob. i. 456, &c. *ὅ γα μὰν ἀριθμὸς ἔχει δύο μὲν ἴδια εἴδη, περισσὸν καὶ ἄρτιον, τρίτον δὲ ἀπ' ἀμφοτέρων μιχθέντων ἀρτιοπέρισσον. ἑκατέρω δὲ τῶ εἴδεος πολλαὶ μορφαί.* By the *ἀρτιοπέρισσον* we must understand either the One, which was so called by the Pythagoreans (vide *infra*, p. 379, 1), but which we should scarcely expect to be described as a separate species; or those even numbers, which, when divided by two, give an uneven result. Vide Iambl. *in Nicom.* p. 29 : *ἀρτιοπέρισσος δέ ἐστιν ὁ καὶ αὐτὸς μὲν εἰς δύο ἴσα κατὰ τὸ κοινὸν διαιρούμενος, οὐ μέντοι γε τὰ μέρη ἔτι διαιρετὰ ἔχων, ἀλλ' εὐθὺς ἑκάτερον περισσόν* So in Nikom. *Arithm. Isag.* i. 9, p. 12 ; Theo, *Math.* i., p. 36 ; cf. Moderatus ap. *Stob.* i. 22 : *ὥστε ἐν τῷ διαιρεῖσθαι δίχα πολλοὶ τῶν ἀρτίων εἰς περισσοὺς τὴν ἀνάλυσιν λαμβάνουσιν ὡς ὁ ἓξ καὶ δέκα.* This is the true reading. Gaisford would keep *ἑξκαίδεκα*, which is against the sense; and Heeren, with whom Meineke agrees, conjectures, not very happily, *ὀκτωκαίδεκα.*

[2] Cf. the words in the passage from Philolaus ap. Stobæus, I. 456 : *τὰ μὲν γὰρ αὐτῶν ἐκ περαινόντων περαίνοντα, τὰ δ' ἐκ περαινόντων τε καὶ ἀπείρων περαίνοντά τε καὶ οὐ περαίνοντα, τὰ δ' ἐξ ἀπείρων ἄπειρα φανέονται.* Among numbers, of which Philolaus is chiefly thinking, those which result from uneven factors only belong to the first

Pythagoreans concluded that the odd and the even are the universal constituents of numbers, and furthermore, of things. They identified the uneven with the limited, and the even with the unlimited, because the uneven sets a limit to bi-partition, and the even does not.[1] Thus they arrived at the proposition that

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class; those which result from even and uneven factors, to the second; those which result from even factors only, to the third.

[1] This is the reason given by the Greek commentators of Aristotle. Simpl. *Phys.* 105 a: *οὗτοι δὲ τὸ ἄπειρον τὸν ἄρτιον ἀριθμὸν ἔλεγον, διὰ τὸ πᾶν μὲν ἄρτιον, ὥς φασιν οἱ ἐξηγηταὶ, εἰς ἴσα διαιρούμενον ἄπειρον κατὰ τὴν διχοτομίαν. ἡ γὰρ εἰς ἴσα καὶ ἡμίση διαίρεσις ἐπ' ἄπειρον, τὸ δὲ περιττὸν προστεθὲν περαίνει αὐτὸ, κωλύει γὰρ αὐτοῦ τὴν εἰς τὰ ἴσα διαίρεσιν. οὕτω μὲν οὖν οἱ ἐξηγηταὶ* (to whom Alexander doubtless belongs). Similarly, Philop. *Phys. K.* 11, *ibid.* 12: *τὸ μὲν γὰρ περιττὸν περατοῖ καὶ ὁρίζει, τὸ δὲ ἄρτιον τῆς ἐπ' ἄπειρον τομῆς αἴτιόν ἐστιν, ἀεὶ τὴν διχοτομίαν δεχόμενον.* Themist. *Phys.* 32 a, p. 221 Speng. The Pythagoreans declare the *ἄρτιος ἀριθμὸς* only as unlimited: *τοῦτον γὰρ εἶναι τῆς εἰς τὰ ἴσα τομῆς αἴτιον ἥτις ἄπειρος.* Aristotle himself says, *Phys.* iii. 4, 203 a, 10: *οἱ μὲν* (the Pythagoreans) *τὸ ἄπειρον εἶναι τὸ ἄρτιον· τοῦτο γὰρ ἐναπολαμβανόμενον* (the uneven included) *παρέχειν τοῖς οὖσι τὴν ἀπειρίαν.* This, indeed, asserts that the even must be the cause of unlimitedness, but not why it should be so; nor do we gather this from the additional words, *σημεῖον δ' εἶναι τούτου τὸ συμβαῖνον ἐπὶ τῶν ἀριθμῶν· περιτιθεμένων γὰρ τῶν γνωμόνων περὶ τὸ ἓν καὶ χωρὶς ὁτὲ μὲν ἄλλο γίνεσθαι τὸ εἶδος, ὁτὲ δὲ ἕν.* These words were explained by the Greek commentators (Alex. *ap. Simpl.* 105 b; *Schol.* 362 a, 30 sqq. and Simplicius himself; Themist. *loc. cit.* *Philop. K.* 13) unanimously as follows: A gnomon is a number which, being added to a square, gives another square; and as this is a property of all uneven numbers (for $1^2+3=2^2$, $2^2+5=3^2$, $3^2+7=4^2$ and so on) such numbers (as *Simpl.* 105 a, *Philop. K.* 13, expressly assert) were called by the Pythagoreans *γνώμονες*. By the addition of odd numbers to one, we get only square numbers ($1+3=2^2$; $1+3+5=3^2$ and so on), and therefore numbers of one kind; whereas in any other way—whether by adding together odd and even numbers (so Philop. says), or by adding even numbers only to the one (so say Alexander, Simplicius, and Themist.), we obtain numbers of the most different sorts, *ἑτερομήκεις*, *τρίγωνοι*, *ἑπτάγωνοι*, &c., and consequently an unlimited plurality of *εἴδη*. This interpretation seems to me preferable to those of Röth, *loc. cit.* and Prantl (Arist. *Phys.* 489). To bring them into harmony with the text of Aristotle was a difficulty, even to the old commentators. The most probable supposition appears to be that the words, which are obscure, from the excessive con-

all consists of the Limited and the Unlimited.[1] With

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ciseness of καὶ χωρὶς, mean this: that if on the one hand the *γνώμονες* be added to the one, there arises one and the same kind of numbers; but if, on the other hand, the other numbers, without the *γνώμονες*, different kinds. So that καὶ χωρὶς would signify: *καὶ περιτιθεμένων τῶν ἀριθμῶν χωρὶς τῶν γνωμόνων.*

[1] Arist. *Metaph.* i. 5, 986 a, 17: *τοῦ δὲ ἀριθμοῦ* [*νομίζουσι*] *στοιχεῖα τό τε ἄρτιον καὶ τὸ περιττὸν, τούτων δὲ τὸ μὲν πεπερασμένον τὸ δὲ ἄπειρον, τὸ δ' ἓν ἐξ ἀμφοτέρων εἶναι τούτων (καὶ γὰρ ἄρτιον εἶναι καὶ περιττὸν), τὸν δ' ἀριθμὸν ἐκ τοῦ ἑνὸς, ἀριθμοὺς δὲ, καθάπερ εἴρηται, τὸν ὅλον οὐρανόν.* Philol. *Fr.* 1, ap. Stob. i. 454: *ἀνάγκα τὰ ἐόντα εἶμεν πάντα ἢ περαίνοντα ἢ ἄπειρα, ἢ περαίνοντά τε καὶ ἄπειρα.* This is probably the commencement of his work, succeeded by the proof of this theorem, of which the following words only have been preserved by Stobæus, *ἄπειρα δὲ μόνον οὐκ ἀεὶ* [*οὔ κα εἴη* Mein.], and these in addition by Iambl. *in Nicom.* 7, and in Villoison, *Anecd.* ii. 196: *ἀρχὰν γὰρ οὐδὲ τὸ γνωσούμενον ἐσσεῖται πάντων ἀπείρων ἐόντων*, vide Böckh, p. 47 sqq. Schaarschmidt, on the other hand (*Schrift. des Philol.* 61), reproduces the text of Stobæus without any mention of the lacunæ in it; and Rothenbücher, *Syst. d. Pyth.* 68, makes objections to this text, which immediately disappear upon a right apprehension of what Philolaus really said: *ἐπεὶ τοίνυν φαίνεται οὔτ' ἐκ περαινόντων πάντων ἐόντα οὔτ' ἐξ ἀπείρων πάντων, δῆλόν τ' ἄρα ὅτι ἐκ περαινόντων τε καὶ ἀπείρων ὅ τε κόσμος καὶ τὰ ἐν αὐτῷ συναρμόχθη. δηλοῖ δὲ καὶ τὰ ἐν τοῖς ἔργοις. τὰ μὲν γὰρ*, etc., vide previous note; cf. Plato, *Phileb.* 16, C: *οἱ μὲν παλαιοὶ, κρείττονες ἡμῶν καὶ ἐγγυτέρω θεῶν οἰκοῦντες, ταύτην φήμην παρέδοσαν, ὡς ἐξ ἑνὸς μὲν καὶ ἐκ πολλῶν ὄντων τῶν ἀεὶ λεγομένων εἶναι, πέρας δὲ καὶ ἀπειρίαν ἐν ἑαυτοῖς ξύμφυτον ἐχόντων.* *Ibid.* 23. C: *τὸν θεὸν ἐλέγομέν που τὸ μὲν ἄπειρον δεῖξαι τῶν ὄντων, τὸ δὲ πέρας.* The latter is also called, 23 E, and 26 B, *πέρας ἔχον*; and the different kinds of the Limited are (p. 25 D), included under the name *περατοειδὲς.* Aristotle, like Plato (*Metaph.* i. 8, 990 a, 8; xiv. 3, 1091 a, 18), has *πέρας* for what he had called, *Metaph.* i. 5, *πεπερασμένον.* There is, in fact, no difference between these various appellations; they are all intended to denote the idea of Limitation, which, however, as a rule, is apprehended, after the manner of the ancients, as concrete, and might be expressed either actively or passively, either as Limiting or Limited, for that which limits another by its admixture with it must in itself be something Limited (cf. Plato, *Tim.* 35 A, where the indivisible substance as such is the binding and limiting principle). Ritter's observations, impugning the authenticity of Aristotle's expressions (Pyth. *Phil.* 116 sqq.), are, therefore, hardly well founded. Nor is it of any consequence that in the above quotation sometimes numbers, sometimes the constituents of number (the Limited and Unlimited), and sometimes (as we shall see further on) the unity of these elements, Harmony, are mentioned as the ground and substance of things; for if all things consist of numbers, all things must necessarily be composed of the universal elements of number—the Limited

this proposition is connected the following observation: that everything unites in itself opposite characteristics. These characteristics they tried to reduce to the fundamental opposition of the limited and the unlimited, odd and even. The limited and the uneven was held, however, by the Pythagoreans, in agreement with the popular belief, as the better and more perfect, the unlimited and the even as the imperfect.[1] Wherever, therefore, they perceived opposite qualities, they regarded the better as limited or uneven, and the worse as unlimited and even. Thus, according to them, all things were divided into two categories, of which one was on the side of the limited, and the other on that of the unlimited.[2] The number of these categories was then more precisely fixed by the sacred number ten,

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and Unlimited; and as these elements only constitute number in their harmonic combination, all things are likewise Harmony, cf. pp. 369, 1; 370, 2; 384, 1. Lastly, if Böckh (*Philol.* 56 sq.) objects to the exposition of Aristotle that odd and even numbers must not be confounded with the Unlimited and the Limited, because being determined they all participate in Unity and are limited; and Brandis, on the other hand, conjectures (i. 452) that the Pythagoreans sought for the Limiting principle in uneven numbers, or gnomic numbers (which are also uneven numbers) or in the decad, we may reply that the *Even* and the *Odd* are not the same as *odd and even number*; the latter is necessarily and always determinate; the former are constituents of all numbers, whether even or odd, and so far are identical with the Limited and Unlimited.

[1] Vide next note, and Arist. *Eth. N.* ii. 5, 1106 b, 29: τὸ γὰρ κακὸν τοῦ ἀπείρου, ὡς οἱ Πυθαγόρειοι εἴκαζον, τὸ δ' ἀγαθὸν τοῦ πεπερασμένου. It will be shown further on that among the Greeks and Romans odd numbers were considered more lucky than even.

[2] Arist. *Eth. N.* i. 4, 1096 b, 5: πιθανώτερον δ' ἐοίκασιν οἱ Πυθαγόρειοι λέγειν περὶ αὐτοῦ [τοῦ ἑνὸς], τιθέντες ἐν τῇ τῶν ἀγαθῶν συστοιχίᾳ τὸ ἕν. *Metaph.* xiv. 6, 1093 b, 11 (on Pythagoreans and Academics with Pythagorean tendencies): ἐκεῖνο μέντοι ποιοῦσι φανερὸν, ὅτι τὸ εὖ ὑπάρχει καὶ τῆς συστοιχίας ἐστὶ τῆς τοῦ καλοῦ τὸ περιττὸν, τὸ εὐθὺ, τὸ ἴσον, αἱ δυνάμεις ἐνίων ἀριθμῶν, not to mention later writers, such as Ps. Plut. *V. Hom.* 145.

and the ten fundamental oppositions were as follows:—1. Limited and Unlimited; 2. Odd and Even; 3. One and Many; 4. Right and Left; 5. Masculine and Feminine; 6. Rest and Motion; 7. Straight and Crooked; 8. Light and Darkness; 9. Good and Evil; 10. Square and Oblong.[1] It is true that this classification belongs only to a portion of the Pythagoreans, who were probably later members of the school;[2] but it was universally admitted both by earlier and later Pythagoreans that things are compounded out of opposing elements; and ultimately, out of the odd and the even, or the limited and the unlimited; and therefore they must all have reduced the given phenomena to these and similar opposites.[1] The drawing up of a

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[1] Arist. *Metaph.* i. 5, 986 a, 22 (directly after the quotation on p. 379. 1): *ἕτεροι δὲ τῶν αὐτῶν τούτων τὰς ἀρχὰς δέκα λέγουσιν εἶναι τὰς κατὰ συστοιχίαν* (in two series directly opposed to one another, the Good and the Evil) *λεγομένας, πέρας καὶ ἄπειρον, περιττὸν καὶ ἄρτιον, ἓν καὶ πλῆθος, δεξιὸν καὶ ἀριστερὸν, ἄῤῥεν καὶ θῆλυ, ἠρεμοῦν καὶ κινούμενον, εὐθὺ καὶ καμπύλον, φῶς καὶ σκότος, ἀγαθὸν καὶ κακὸν, τετράγωνον καὶ ἑτερόμηκες.* That the Pythagoreans derived motion from the Unlimited is also asserted by Eudemus, ap. Simpl. *Phys.* 98 b: *Πλάτων δὲ τὸ μέγα καὶ τὸ μικρὸν καὶ τὸ μὴ ὂν καὶ τὸ ἀνώμαλον καὶ ὅσα τούτοις ἐπὶ ταὐτὸ φέρει τὴν κίνησιν λέγει . . . βέλτιον δὲ αἴτια* [sc. *τῆς κινήσεως*] *λέγειν ταῦτα ὥσπερ Ἀρχύτας, καὶ μετ' ὀλίγον τὸ δ' ἀόριστόν, φησι, καλῶς ἐπὶ τὴν κίνησιν οἱ Πυθαγόρειοι καὶ ὁ Πλάτων ἐπιφέρουσιν*, &c. Brandis (i. 451; *Rhein. Mus.* ii. 221) concludes from this passage that Archytas referred motion to the Limiting; but he is deceived by the expression, *αἴτιον*, which, in any case, should be completed by *τῆς κινήσεως*, even if we adopt his reading, *αἴτιον λέγειν ὥσπερ Ἀρχύτας*. (In the *Gesch. der Entw. der Griech. Phil.* i. 169, he has modified his view of this passage. He must, however, have somewhat forgotten his previous utterances, for he says: 'That Archytas referred motion to the Unlimited I still maintain, in spite of Zeller's objection.') This derivation of motion we also find in Arist. *Phys.* iii. 2, 201 b, 20: *ἔνιοι ἑτερότητα καὶ ἀνισότητα καὶ τὸ μὴ ὂν φάσκοντες εἶναι τὴν κίνησιν*, which Simpl. *Phys.* 98 a, b, and Philop. *Phys.* i. 16, connect with the Pythagoreans, and Plato agrees with them, cf. Part ii. a, 808, 1. There is all the less reason to contest the assertion of Eudemus (with Chaignet, v. 146), since, according to Alcmæon, the gods and the stars are always moving (vide *infra*), and the soul, too, is in constant motion. The ceaselessness of this motion, the fact that, as Alcmæon says, it connects the beginning with the end, might be considered a perfection, even though motion itself were an imperfection; it shows that the heavenly bodies themselves consist of the Limiting *and* Unlimited. Röth's statement (*Philol. Fragm.*, *περὶ ψυχῆς*, 21) that in the table of the ten opposites it is only motion externally produced, which is placed on the side of the *ἄπειρον*, is entirely groundless.

[2] Chaignet ii. 50 sq. questions this, because, according to Aristo-

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tle (vide *infra* § vii.) Alcmæon had already admitted the ten oppositions, '*tels que nous venons de les exposer*.' But Aristotle asserts, as is quite obvious, not that Alcmæon admitted *the ten opposites*, but that, in agreement with the Pythagoreans, he assumed human life to be ruled by oppositions; which, however, he did not like them reduce to fixed and definite categories. Aristotle, in short, asserts pretty nearly the contrary of what Chaignet finds in him.

[1] Vide *sup.* p. 378 sq. Brandis thinks he discovers in this a trace of a different manner of conceiving the Pythagorean philosophy (*Rhein. Mus.* ii. 214, 239 sqq.; *Gr. röm. Phil.* i. 445, 502 sqq.). All, however, that can be inferred from the words of Aristotle is this: that *all* the Pythagoreans did not hold the decuple table of oppositions, but some of them held only the fundamental opposition of the Odd or the Limited, and the Even and the Unlimited. This does not exclude the possibility that these latter Pythagoreans may have applied that fundamental opposition to the explanation of phenomena, and may have reduced to it the opposites which they observed in things. Such attempts, indeed, were so directly necessitated by the general theory of the school that things are a combination of the Limited and the Unlimited, the Odd and the Even, that we can hardly conceive of the one without the other. How could this doctrine of the Pythagoreans ever have arisen, and what importance would it have had for them had it not been applied to concrete phenomena? Granting that Aristotle may, perhaps, in the passages cited from the Nicomachæan Ethics, have had primarily in view the table of the ten opposites; granting that less stress is to be laid on *Metaph.* xiv. 6, because this passage does not relate merely to the Pythagoreans: granting that the slight difference to be found in the enumeration in Plutarch (*De Is.* c. 48) is to be regarded as unimportant, and that the septuple table of Eudorus (ap. Simpl. *Phys.* 39 a; vide *infra*, p. 388, 1) as well as the triple table, *Diog.* viii. 26, prove little, because these writers evidently mix up later doctrines; granting that, for the same reason, we cannot attach much weight to the text of Ps. Alex. in *Metaph.* xii. 6, 668, 16; and lastly, that the different arrangement of the several members in Simpl. *Phys.* 98 a, and Themist. *Phys.* 30 b, 216, is immaterial to the present question; yet it lies in the nature of things that even those who had not the decuple table, must have applied and developed the doctrine of opposites; not, indeed, according to that fixed scheme, but in a freer

table of such opposites was nothing more than a formal development; for the comprehension of the fundamental doctrines of Pythagoreanism this table is of the less importance, since in it the separate numbers are not the result of any deduction according to a definite principle, but out of all the opposites that are given to us empirically, certain of the most prominent,[1] chosen in a somewhat arbitrary manner, are enumerated, until the number ten is complete. So also the apportionment of the particular concepts to the several series is to a great extent arbitrary, although generally speaking we cannot mistake the leading point of view, which consists in an attempt to assign the uniform, the perfect, the self-completed, to the Limited; and the opposite categories of these, to the Unlimited.

According to this theory the primary constituents of things are of a dissimilar and opposite nature; a bond was therefore necessary to unite them, and cause

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manner. That other oppositions, besides the ten, were observed is clear from Aristotle, ap. Simpl. *De Cælo*, 173 a, 11; *Schol. in Arist.* 492 a, 24, *τὸ οὖν δεξιὸν καὶ ἄνω καὶ ἔμπροσθεν ἀγαθὸν ἐκάλουν, τὸ δὲ ἀριστερὸν καὶ κάτω καὶ ὄπισθεν κακὸν ἔλεγον, ὡς αὐτὸς Ἀριστοτέλης ἱστόρησεν ἐν τῇ τῶν Πυθαγορείοις* (for which Karsten, clearly unjustifiably, reads, Πυθαγόρᾳ), *ἀρεσκόντων συναγωγῇ*. The prohibition of placing the left thigh over the right (Plut. *De Vit. pud.* 8, p. 532) is connected with the preference of right and left.

[1] As may easily be shown, even irrespectively of the reasons for which, e.g. Plutarch, *Qu. rom.* 102, p. 288 (and similarly *De Ei. ap. D.* c. 8, p. 388) derives the comparison of the uneven with the male, and the even with the female, *γόνιμος γάρ ἐστι [ὁ περιττὸς ἀριθμὸς] καὶ κρατεῖ τοῦ ἀρτίου συντιθέμενος, καὶ διαιρουμένων εἰς τὰς μονάδας, ὁ μὲν ἄρτιος, καθάπερ τὸ θῆλυ, χώραν μεταξὺ κενὴν ἐνδίδωσι, τοῦ δὲ περιττοῦ μόριον ἀεί τι πλῆρες ὑπολείπεται.* It is said that Pythagoras designated odd numbers, and especially the Monad, as male; and even numbers, especially the Dyad, as female, vide Ps. Plut. *V. Hom.* 145; Hippol. *Refut.* vi. 23, i. 2, p. 10; Alex. *ad. Metaph.* i. 5, 29, 13; Bon. Schol. 540 b, 15; Philop. *Phys.* K. ii. cf. Sext. *Matt.* v. 8.

them to be productive. This bond of the elements is harmony,[1] which is defined by Philolaus as the unity of the manifold, and the accord of the discordant.[2] As therefore the opposition of the elements is present in all things, so must harmony be present likewise; and it may with equal propriety be said that all is number and that all is harmony,[3] for every number is a definite union, or a harmony of the odd and the even. But, as with the Pythagoreans, the perception of the inherent contradictions in things primarily connects itself with the idea of number, so the recognition of the harmony which reconciles these contradictions is connected with the idea of musical relations; harmony as conceived by them is nothing else than the octave,[1] the relations of which therefore Philolaus proceeds at once to expound, when he wishes to describe the essential nature of harmony.[2] Strange as this may seem to us, it was natural enough to those who were not as yet accustomed to distinguish definitely general concepts from the particular phenomena, through which they arrived at the perception of these concepts. In the concord of tones the Pythagoreans recognise the general law of the union of opposites: they therefore call every such combination harmony (as Heracleitus and Empedocles likewise do),[3] and transfer to it the relations of musical harmony, which they were the first to determine.[1]

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[1] Philol. ap. Stob. i. 460, in continuation of the passage quoted *supra*, p. 372, 1: ἐπεὶ δέ τε ἀρχαὶ ὑπᾶρχον οὐχ ὁμοῖαι οὐδ' ὁμόφυλοι ἔσσαι, ἤδη ἀδύνατον ἧς ἂν καὶ αὐταῖς κοσμηθῆμεν, εἰ μὴ ἁρμονία ἐπεγένετο, ᾧτινι ἂν τρόπῳ ἐγένετο. τὰ μὲν ὦν ὁμοῖα καὶ ὁμόφυλα ἁρμονίας οὐθὲν ἐπεδέοντο· τὰ δὲ ἀνομοῖα μηδὲ ὁμόφυλα μηδὲ ἰσοτελῆ ἀνάγκα τὰ τοιαῦτα ἁρμονίᾳ συγκεκλεῖσθαι, εἰ μέλλοντι ἐν κόσμῳ κατέχεσθαι. The proposition that contraries only, and not similar things, require Harmony is thought so strange by Rothenbücher (*Syst. d. Pyth.* 73) that it seems to him a decided argument against the authenticity of the fragment. But this singularity only arises because Rothenbücher, manifestly against the opinion of the author, substitutes the περαίνοντα for the ὅμοια, and the ἄπειρα for the ἀνόμοια. For the rest, not only do Heracleitus (vide *infra*) and others, following him, maintain that every Harmony presupposes an opposite, but Aristotle (*De An.* i. 4) himself quotes the theory that the soul is a harmony, καὶ γὰρ τὴν ἁρμονίαν κρᾶσιν καὶ σύνθεσιν ἐναντίων εἶναι (just so Philolaus, vide following note) καὶ τὸ σῶμα συγκεῖσθαι ἐξ ἐναντίων, and Plato puts the same into the mouth of a pupil of Philolaus (*Phædo*, 86 B).

[2] Nicom. *Arithm.* p. 59 (Böckh, *Philol.* 61) ἔστι γὰρ ἁρμονία πολυμιγέων ἕνωσις καὶ διχᾶ φρονεόντων σύμφρασις. This definition is often quoted as Pythagorean, vide Ast. *in hoc loc.* p. 299. Böckh ascribes it to Philolaus, with probability, on the strength of the above passage.

[3] Arist. *Metaph.* i. 5: τὸν ὅλον οὐρανὸν ἁρμονίαν εἶναι καὶ ἀριθμόν. Cf. Strabo x. 3, 10, p. 468 Cas.: μουσικὴν ἐκάλεσε Πλάτων καὶ ἔτι πρότερον οἱ Πυθαγόρειοι τὴν φιλοσοφίαν, καὶ καθ' ἁρμονίαν τὸν κόσμον συνεστάναι φασί. Athen. xiii. 632 b: Πυθαγόρας . . . καὶ τὴν τοῦ παντὸς οὐσίαν διὰ μουσικῆς ἀποφαίνει συγκειμένην.

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[1] *'Αρμονία* is the name for the octave, cf. e.g. Aristox. *Mus.* ii. 36: *τῶν ἑπταχόρδων ἃ ἐκάλουν ἁρμονίας.* Nikom. *Harm. Introd.* i. 16: *οἱ παλαιότατοι . . . ἁρμονίαν μὲν καλοῦντες τὴν διὰ πασῶν*, etc.

[2] Ap. Stobæus, i. 462 (Nicom. *Harm.* i. 17); he thus continues, immediately after the passage just quoted: *ἁρμονίας δὲ μέγεθός ἐντι συλλαβὰ* (the fourth) *καὶ δι' ὀξειᾶν* (the fifth)· *τὸ δὲ δι' ὀξειᾶν μεῖζον τᾶς συλλαβᾶς ἐπογδόῳ* (a tone = 8 : 9)· *ἔστι γὰρ ἀπὸ ὑπάτας ἐς μέσαν συλλαβὰ, ἀπὸ δὲ μέσας ποτὶ νεάταν δι' ὀξειᾶν, ἀπὸ δὲ νεάτας ἐς τρίταν συλλαβὰ, ἀπὸ δὲ τρίτας ἐς ὑπάταν δι' ὀξειᾶν· τὸ δ' ἐν μέσῳ μέσας καὶ τρίτας ἐπόγδοον· ἁ δὲ συλλαβὰ ἐπίτριτον, τὸ δὲ δι' ὀξειᾶν ἡμιόλιον· τὸ διὰ πασῶν δὲ διπλόον* (the fourth = 3: 4, the fifth = 2: 3, the octave = 2: 4). *οὕτως ἁρμονία πέντε ἐπόγδοα καὶ δύο διέσιες, δι' ὀξειᾶν δὲ τρί' ἐπόγδοα καὶ δίεσις. συλλαβὰ δὲ δύ' ἐπόγδοα καὶ δίεσις* (the lesser semi-tone called afterwards *λεῖμμα* = 243 : 256). An explanation of this passage is given by Böckh, *Philol.* 65–89, and after him, by Brandis, i. 456 sqq. Perhaps the passage in Sextus, *Math.* iv. 6, may also refer to it; this passage likewise correctly explains the meaning of Harmony: *ὡς γὰρ τὸν ὅλον κόσμον κατὰ ἁρμονίαν λέγουσι διοικεῖσθαι, οὕτω καὶ τὸ ζῷον ψυχοῦσθαι. δοκεῖ δὲ ἡ τέλειος ἁρμονία ἐν τρισὶ συμφωνίαις λαβεῖν τὴν ὑπόστασιν, τῇ τε διὰ τεττάρων καὶ τῇ διὰ πέντε καὶ τῇ διὰ πασῶν.* As to the harmonic system, vide *infra*.

[3] Böckh, *Philol.* 65, has rather a different interpretation of this. He says: 'Unity is the Limit, but the Unlimited is indefinite Duality, which becomes definite Duality since twice the measure of Unity is included in it; Limitation is, therefore, given through the determination of Duality by means of Unity; that is, by fixing the proportion, 1 : 2, which is the mathematical proportion of the Octave. The Octave is, therefore, Harmony itself, through which the opposite primitive causes were united.' What prevents me from adopting this ingenious view is my inability absolutely to identify the Limit and Unlimited with Unity and Duality.

Before we go further, however, it seems necessary to examine some different opinions concerning the Pythagorean doctrine of first principles; opinions founded partly on the statements of ancient authors, and partly on the conjectures of modern scholars. According to our exposition so far, the Pythagorean system started from the proposition that all is, in its essence, number. From this results the doctrine of the primitive opposites; and consequently, the opposition of the crooked and the straight, the limited and the unlimited precede all others. The unity likewise of these opposites was sought in number alone, which was therefore defined more particularly as harmony. Many of our authorities, however, represent the matter differently. They assert that the entire system was founded on the opposition of unity and duality, which is then reduced to the opposition of spiritual and corporeal, of form and substance, of the Deity and matter, and is itself derived from the Deity as the original Unity. According to another theory, the starting point of the system was *not* the arithmetical conception of number and its constituents, but the geometrical conception of the limits of space and of unlimited space. A third opinion bases the system not on the consideration of number, but on the distinction of the limited and unlimited. We have now to enquire how much in all this is in accordance with historical evidence and internal probability.

The first of the above-mentioned theories is found soon after the commencement of the first century before Christ in Alexander Polyhistor. The Pythagoreans, he tells us, appealing to statements of the Pythagoreans, regarded Unity as the beginning of all things; from Unity arose indefinite Duality, which was related to Unity as matter to the efficient cause; from Unity and Duality sprang numbers, and from numbers, points, &c.[1] This view is developed in the extensive excerpts in Sextus[2] from a Pythagorean work. According to it, the Pythagoreans, in a full discussion of the subject, maintained that the causes of sensible phenomena can lie neither in what is sensibly perceptible, nor in anything corporeal, nor even in mathematical figures, but only in Unity and indeterminate Duality, and that all logical categories are in the end reducible to these two principles. They, therefore, regarded Unity as efficient cause, and Duality as passive matter, and supposed not merely numbers, but also figures, bodies, elements, and the world itself, to originate from the co-operation of the two principles.[3] These principles receive a further interpretation from the Neo-Pythagoreans and Neo-Platonists. The Pythagoreans, says Eudorus,[1] reduced all things ultimately to the One, by which they understood nothing else than the highest Deity; they derived from this two principles, the One and indefinite Duality, God and matter; under the former they classed everything that is good, under the latter everything evil. Consequently they used various names to designate these principles. The One they called the uneven, the masculine, the ordered. That which is opposed to unity they called the even, the feminine, the unordered, &c. Inasmuch, however, as this second element is derived from the One, the One alone is to be regarded as first principle in the true sense of the word. Similarly, Moderatus[2] asserts that

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[1] Further details hereafter.

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[1] Diog. viii. 24 sq.: φησὶ δ' ὁ Ἀλέξανδρος ἐν ταῖς τῶν φιλοσόφων διαδοχαῖς, καὶ ταῦτα εὑρηκέναι ἐν Πυθαγορικοῖς ὑπομνήμασιν. ἀρχὴν μὲν ἁπάντων μονάδα· ἐκ δὲ τῆς μονάδος ἀόριστον δυάδα ὡς ἂν ὕλην τῇ μονάδι αἰτίῳ ὄντι ὑποστῆναι· ἐκ δὲ τῆς μονάδος καὶ τῆς ἀορίστου δυάδος τοὺς ἀριθμούς· ἐκ δὲ τῶν ἀριθμῶν τὰ σημεῖα, etc. In the same sense the mythical Zaratas, the instructor of Pythagoras, ap. Plut. *Procr. An.* 2, 2, p. 1012, called the One the father, and indeterminate Duality the mother of numbers, cf. p. 389, 3.

[2] *Pyrrh.* iii. 152–157; *Math.* x. 249–284; vii. 94, 109. It is evident that these three texts are based upon the same work.

[3] Cf. *Math.* x. 261: ὁ Πυθαγόρας ἀρχὴν ἔφησεν εἶναι τῶν ὄντων τὴν μονάδα, ἧς κατὰ μετοχὴν ἕκαστον τῶν ὄντων ἓν λέγεται, καὶ ταύτην κατ' αὐτότητα μὲν ἑαυτῆς νοουμένην μονάδα νοεῖσθαι, ἐπισυντεθεῖσαν δ' ἑαυτῇ καθ' ἑτερότητα ἀποτελεῖν τὴν καλουμένην ἀόριστον δυάδα, etc. Section 276: ἐξ ὧν γίνεσθαί φασι τό τ' ἐν τοῖς ἀριθμοῖς ἓν καὶ τὴν ἐπὶ τούτοις πάλιν δυάδα, ἀπὸ μὲν τῆς πρώτης μονάδος τὸ ἕν, ἀπὸ δὲ τῆς μονάδος καὶ τῆς ἀορίστου δυάδος τὰ

δύο· δὶς γὰρ τὸ ἓν δύο . . . κατὰ ταῦτα (l. ταὐτὰ) δὲ καὶ οἱ λοιποὶ ἀριθμοὶ ἐκ τούτων ἀπετελέσθησαν, τοῦ μὲν ἑνὸς ἀεὶ περιπατοῦντος, τῆς δὲ ἀορίστου δυάδος δύο γεννώσης καὶ εἰς ἄπειρον πλῆθος τοὺς ἀριθμοὺς ἐκτεινούσης. ὅθεν φασὶν ἐν ταῖς ἀρχαῖς ταύταις τὸν μὲν τοῦ δρῶντος αἰτίου λόγον ἐπέχειν τὴν μονάδα, τὸν δὲ τῆς πασχούσης ὕλης τὴν δυάδα. Vide *ibid.* on the formation of figures and things from numbers.

[1] Simpl. *Phys.* 39 a: γράφει δὲ περὶ τούτων ὁ Εὔδωρος τάδε· κατὰ τὸν ἀνωτάτω λόγον φατέον τοὺς Πυθαγορικοὺς τὸ ἓν ἀρχὴν τῶν πάντων λέγειν, κατὰ δὲ τὸν δεύτερον λόγον δύο ἀρχὰς τῶν ἀποτελουμένων εἶναι, τό τε ἓν καὶ τὴν ἐναντίαν τούτῳ φύσιν, ὑποτάσσεσθαι δὲ πάντων τῶν κατὰ ἐναντίωσιν ἐπινοουμένων τὸ μὲν ἀστεῖον τῷ ἑνὶ τὸ δὲ φαῦλον τῇ πρὸς τοῦτο ἐναντιουμένῃ φύσει· διὸ μηδὲ εἶναι τὸ σύνολον ταύτας ἀρχὰς κατὰ τοὺς ἄνδρας· εἰ γὰρ ἡ μὲν τῶνδε, ἡ δὲ τῶνδε ἐστὶν ἀρχὴ οὐκ εἰσὶ κοιναὶ πάντων ἀρχαὶ ὥσπερ τὸ ἕν. καὶ πάλιν. διό, φησι, καὶ κατὰ ἄλλον τρόπον ἀρχὴν ἔφασαν τῶν πάντων τὸ ἓν ὡς ἂν καὶ τῆς ὕλης καὶ τῶν ὄντων πάντων ἐξ αὐτοῦ γεγεννημένων, τοῦτο δὲ εἶναι τὸν ὑπεράνω θεόν . . . φημὶ τοίνυν τοὺς περὶ τὸν Πυθαγόραν τὸ μὲν ἓν πάντων ἀρχὴν ἀπολιπεῖν κατ' ἄλλον δὲ τρόπον δύο τὰ ἀνωτάτω στοιχεῖα παρεισάγειν, καλεῖν δὲ τὰ δύο ταῦτα στοιχεῖα πολλαῖς προσηγορίαις· τὸ μὲν γὰρ αὐτῶν ὀνομάζεσθαι τεταγμένον, ὡρισμένον, γνωστὸν, ἄῤῥεν, περιττὸν, δεξιὸν, φῶς, τὸ δὲ ἐναντίον τούτῳ ἄτακτον etc. ὥστε ὡς μὲν ἀρχὴ τὸ ἓν ὡς δὲ στοιχεῖα τὸ ἓν καὶ ἡ ἀόριστος δυὰς ἀρχαί, ἄμφω ἓν ὄντα πάλιν, καὶ δῆλον ὅτι ἄλλο μέν ἐστιν ἓν ἡ ἀρχὴ τῶν πάντων, ἄλλο δὲ ἓν τὸ τῇ δυάδι ἀντικείμενον ὃ καὶ μονάδα καλοῦσιν.

[2] Porph. *Vita Pythag.* 48 sqq.

the Pythagoreans briefly designated by the One the relation of unity, identity and equality, the ground of all concord and of all fixed consistency; and by duality,[1] the principle of all multiplicity, inequality, division, and change. In agreement with this, we read in the Plutarchic *Placita*[2] that of the two principles of Pythagoras, Unity denoted the good, reason, or deity; and indefinite Duality, evil, matter, and the dæmons. Of these two writers, the former only is at the pains to tell us that the doctrines he ascribes to the Pythagoreans were not stated by them in so many words, but are merely hinted at in their number-theory. Other writers of later times express themselves to the same effect.[3]

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[1] Porphyry says himself, section 38: *ἐκάλει γὰρ τῶν ἀντικειμένων δυνάμεων τὴν μὲν βελτίονα μονάδα καὶ φῶς καὶ δεξιὸν καὶ ἴσον καὶ μένον καὶ εὐθὺ, τὴν δὲ χείρονα δυάδα καὶ σκότος καὶ ἀριστερὸν καὶ περιφερὲς καὶ φερόμενον.*

[2] i. 3, 14 sq. (Stob. i. 300): *Πυθαγόρας . . . ἀρχὰς τοὺς ἀριθμοὺς . . . πάλιν δὲ τὴν μονάδα καὶ τὴν ἀόριστον δυάδα ἐν ταῖς ἀρχαῖς. σπεύδει δ' αὐτῷ τῶν ἀρχῶν ἡ μὲν ἐπὶ τὸ ποιητικὸν αἴτιον καὶ εἰδικὸν, ὅπερ ἐστὶ νοῦς, ὁ θεὸς, ἡ δ' ἐπὶ τὸ παθητικὸν καὶ ὑλικὸν, ὥσπερ ἐστὶν ὁ ὁρατὸς κόσμος.* i. 7, 14 (Stob. i. 58; Eus. *Pr. Ev.* xiv. 15, 6; Galen. c. 8, p. 251): *Πυθαγόρας τῶν ἀρχῶν τὴν μὲν μονάδα θεὸν* (so Hippolyt. *Refut.* i. 2, p. 8; Epiph. *Exp. Fid.* p. 1087, A) *καὶ τἀγαθὸν, ἥ τις ἐστὶν ἡ τοῦ ἑνὸς φύσις, αὐτὸς ὁ νοῦς· τὴν δ' ἀόριστον δυάδα δαίμονα καὶ τὸ κακὸν, περὶ ἣν ἐστι τὸ ὑλικὸν πλῆθος, ἔστι δὲ καὶ ὁ ὁρατὸς κόσμος.*

[3] Cf. the Pseudo-Plutarch (perhaps Porphyry) *Vita Homeri*, 145, according to whom Pythagoras *πάντα εἰς ἀριθμοὺς ἀναφέρων . . . δύο τὰς ἀνωτάτω ἀρχὰς ἐλάμβανε, τὴν μὲν ὡρισμένην μονάδα, τὴν δὲ ἀόριστον δυάδα καλῶν· τὴν μὲν ἀγαθῶν, τὴν δὲ κακῶν οὖσαν ἀρχὴν*, because, as is afterwards explained, everything good is *συμφωνίας οἰκεῖον*, and everything evil arises from discord and strife. Hippol. *Refut.* vi. 23: *Πυθ. τοίνυν ἀρχὴν τῶν ὅλων ἀγέννητον ἀπεφήνατο τὴν μονάδα, γεννητὴν δὲ τὴν δυάδα καὶ πάντας τοὺς ἄλλους ἀριθμούς. καὶ τῆς μὲν δυάδος πατέρα φησὶν εἶναι τὴν μονάδα, πάντων δὲ τῶν γεννωμένων μητέρα δυάδα, γεννητὴν γεννητῶν.* His teacher, Zaratas, also called Unity, Father, and Duality, Mother; cf. p. 387, 1; Ps. Justin. *Cohort.* 19 (cf. ch. 4): *τὴν γὰρ μονάδα ἀρχὴν ἁπάντων λέγων* (sc. *Πυθαγ.*) *καὶ ταύτην τῶν ἀγαθῶν ἁπάντων αἰτίαν εἶναι, δι' ἀλληγορίας ἕνα τε καὶ μόνον διδάσκει θεὸν εἶναι*; Syrian, *ad. Metaph. Schol. in Arist.* 842 a, 8; cf. 931 a, 6:—Most of the Pythagoreans call the cause of all things the Monad and the Dy-

The pseudo-Archytas[1] differs only from this interpretation in making the distinction more prominent between the primitive essence and the two derived principles, and in apprehending the latter not in the Pythagorean, but in the Aristotelian form. He indicates as the most universal principles, form and matter; form corresponds to the regulated and determinate, and matter to the unregulated and indeterminate; form is a beneficent, and matter a destructive nature; but he discriminates both from the Deity, which, standing above them, moves matter towards form, and moulds it artistically. Lastly, numbers and geometrical figures are here represented, after the manner of Plato; as the intermediate link between form and matter. It

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ad; Pythagoras himself in the *ἱερὸς λόγος* calls it Proteus (from *πρῶτος*) and the Dyad or Chaos. Other Pseudo-Pythagorean fragments, of which the contents are similar, are given in Part iii. b, 99, second edition.

[1] In the fragment quoted, ap. Stobæum, i. 710 sq. The spuriousness of this fragment has been exhaustively shown by Ritter (*Pythag. Philos.* 67 sq.; *Gesch. der Phil.* i. 377 sq.) and by Hartenstein (*De Arch. Fragm.* 9 sqq.). The only fault of the latter is his attempt to save a portion of the fragment. Petersen's remarks (*Zeitschrift für Alterthumsw.* 1836, 873 sqq.) contain nothing weighty enough to contravene this judgment, in which Hermann (*Plat. Phil.* i. 291) rightly concurs. The Aristotelian and Platonic element in the thoughts and expressions is so evident that any further demonstration seems superfluous; and even the influence of Stoicism is betrayed in the identification of ὕλη and οὐσία, which is never met with in the earlier philosophers. Even if Petersen could succeed in tracing a part of the questionable terminology in Arist. *Metaph.* viii. 2, 1043 a, 21, to Archytas (which is impossible if we duly distinguish in this passage Aristotle's own comments from his quotations of Archytas); even if Petersen's conjecture were well founded that the fragments in Stobæus are taken from Aristotle's excerpts from Archytas (although the Doric dialect still appears in them), there would still be grave reason to doubt the authenticity of the passage. Archytas did not separate the motive cause from the elements of number, as Hermann well observes, in citing a text (vide *supra*, p. 381, 1), according to which that philosopher characterised inequality and indeterminateness as the cause of motion.

is affirmed in more than one place[1] that the Pythagoreans exalted the Deity above the opposition of principles, and derived the principles from Deity. Unity as Deity, and antecedent to this opposition, was called the One. Unity as opposed to duality, and as a member of the opposition, was called the Monad.[2]

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[1] Syrian *in Met. Schol.* 927 a, 19: *ἄξιον δὴ τούτοις ἢ τὰ Κλεινίου τοῦ Πιθαγορείου παραβάλλειν, . . . ἡνίκα ἂν αὐτὸ [τὸ ἓν] σεμνύνων ἀρχὰν εἶναι τῶν ὄντων λέγῃ καὶ νοατῶν μέτρον καὶ ἀγένητον καὶ ἀΐδιον καὶ μόνον καὶ κυριῶδες, αὐτὸ τὸ* (rejected by Usener. I should myself prefer *αὐτό τε*) *ἑαυτὸ δηλοῦν ἢ τὰ τοῦ θείου Πλάτωνος* &c. Also *ibid.* 925 b, 23: *ὅλως δὲ οὐδὲ ἀπὸ τῶν ὡσανεὶ ἀντικειμένων οἱ ἄνδρες ἤρχοντο, ἀλλὰ καὶ τῶν δύο συστοιχιῶν τὸ ἐπέκεινα ᾔδεσαν, ὡς μαρτυρεῖ Φιλόλαος τὸν θεὸν λέγων πέρας καὶ ἀπειρίαν ὑποστῆσαι, . . . καὶ ἔτι πρὸ τῶν δύο ἀρχῶν τὴν ἑνιαίαν αἰτίαν καὶ πάντων ἐξῃρημένην προέταττον, ἣν Ἀρχαίνετος* (or, according to the conjecture of Böckh, *Philol.* 54, 149, in which Hartenstein, *Arch. Fragm.* 12, concurs: *Ἀρχύτας*, a reading which Usener had admitted in the text) *μὲν αἰτίαν πρὸ αἰτίας εἶναί φησι, Φιλόλαος δὲ τῶν πάντων ἀρχὰν εἶναι διισχυρίζεται, Βρυτῖνος δὲ ὡς τοῦ παντὸς καὶ οὐσίας δυνάμει καὶ πρεσβείᾳ ὑπερέχει* (Röth's corrections of this passage are superfluous and mistaken). Cf. also *ibid.* 935 b, 13: *ἔστι μὲν ὑπερούσιον παρά τε τῷ Πλάτωνι τὸ ἓν καὶ τἀγαθὸν καὶ παρὰ Βροντίνῳ τῷ Πυθαγορείῳ καὶ παρὰ πᾶσιν ὡς εἰπεῖν τοῖς ἀπὸ τοῦ διδασκαλείου τοῦ τῶν Πυθαγορείων ὁρμωμένοις.* Pseudo-Alex. *in Metaph.* 800, 32: *οἱ μὲν, ὥσπερ Πλάτων καὶ Βροτῖνος ὁ Πυθαγόρειος, φασὶν ὅτι τὸ ἀγαθὸν αὐτὸ τὸ ἕν ἐστι καὶ οὐσίωται ἐν τῷ ἓν εἶναι.* Cf. also the *ἀΐδιος θεὸς* ap. Plut. *Plac.* iv. 7, 4; Pseudo-Butherus ap. Stob. *Ecl.* i. 12 (Unity is the uncreated, the supreme cause, &c.); *Theol. Arithm.* p. 8, and Athenag. *Suppl.* c. 6: *Λύσις δὲ καὶ ὄψει* (*Ὄψιμος* cf. Iambl. *V. P.* 267) *ὁ μὲν ἀριθμὸν ἄῤῥητον* (an irrational number, here doubtless an irrational numerical root) *ὁρίζεται τὸν θεὸν, ὁ δὲ τοῦ μεγίστου τῶν ἀριθμῶν τὴν παρὰ τῶν ἐγγυτάτων* [*τοῦ ἐγγυτάτω*] *ὑπεροχὴν*, which Athenagoras explains, no doubt correctly, by saying that the highest number designates the decade, and the number nearest to it nine, so that the whole is only a fanciful circumlocution for Unity.

[2] Eudorus, *loc. cit. sup.* p. 388, 1; Hippol. *Refut.* i. 2, p. 10: *ἀριθμὸς γέγονε πρῶτος ἀρχὴ, ὅπερ ἐστὶν ἕν, ἀόριστος ἀκατάληπτος, ἔχων ἐν ἑαυτῷ πάντας τοὺς ἐπ' ἄπειρον δυναμένους ἐλθεῖν ἀριθμοὺς κατὰ τὸ πλῆθος. τῶν δὲ ἀριθμῶν ἀρχὴ γέγονε καθ' ὑπόστασιν ἡ πρώτη μονὰς, ἥτις ἐστὶ μονὰς ἄρσην γεννῶσα πατρικῶς πάντας τοὺς ἄλλους ἀριθμούς. δεύτερον δὲ ἡ δυὰς θῆλυς ἀριθμὸς* &c. Syrian (*in Metaph. Schol.* 917 b, 5) quotes as from Archytas the following text: *ὅτι τὸ ἓν καὶ ἡ μονὰς συγγενῆ ἐόντα διαφέρει ἀλλήλων*, and appeals to Moderatus and Nicomachus in support of this distinction. Proclus *in Tim.* 54 D sq. The first Being is, according to the Pythagoreans,

But although these statements have found much favour with modern writers, they are not sufficiently attested to warrant our adopting even their essential substance. It has already been observed that we can trust the information of later writers about the Pythagorean philosophy, and especially of Neo-Pythagorean and Neo-Platonic writers, only to the extent that their sources are known to us. But these sources are in the present instance either not mentioned, or else they are contained in writings the authenticity of which is more than doubtful. In regard to the long fragment of Archytas, this has already been shown; there can scarcely be any question of it in the case of the quotations from Brotinus, Clinias, and Butherus:[1] the

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the ἓν, which is above all oppositions; the second, the ideal Monad or the Limit, and indeterminate duality or the Unlimited. Similarly Damasc. *De Princ.* c. 43, 46, p. 115, 122: the ἓν, according to Pythagoras, precedes the Monad. On the contrary, Moderatus ap. Stob. *Ecl.* i. 20, says if these words belong to him: *τινὲς τῶν ἀριθμῶν ἀρχὴν ἀπεφήναντο τὴν μονάδα τῶν δὲ ἀριθμητῶν τὸ ἕν.* Theo. *Math.* c. 4, also agreeing with this says in his own name that the Monad is above the One. Sextus (vide *supra*, p. 387, 3), the *Cohortatio* of Justin. c. 19, and the anonymous author ap. Photius, *Cod.* 249, p. 438 b, consider the Monad to be the highest, when they say that the Monad is the divinity, and that it stands above the One: *τὴν μὲν γὰρ μονάδα ἐν τοῖς νοητοῖς εἶναι τὸ δὲ ἓν ἐν τοῖς ἀριθμοῖς* (Just.) Röper in the *Philol.* vii. 546, thinks that we should substitute *ἀριθμητοῖς* for *ἀριθμοῖς*, but this is the less likely, as Photius has the same. It is plain that here all is caprice and confusion. The commentators of Aristotle, such as Pseudo-Alexander (in *Met.* 775, 31, 776, 10 Bon.), Simpl. (*Phys.* 32 b), are accustomed to consider the doctrine of Unity and indeterminate Duality as Pythagorean.

[1] In Clinias the spuriousness is evident even from the expression *μέτρον τῶν νοητῶν*. In the fragment given by Brotinus the proposition that the primitive essence is superior to Being in force and dignity is taken word for word from the *Republic* of Plato, vi. 509 B; and when *to* Being is added *νοῦς*, the Aristotelian divinity, this addition clearly proves that this is a writing of *the* period of Neo-Pythagoreanism or Neo-Platonism. The words *ὅτι τὸ ἀγαθὸν* &c., can only belong *to* that period.

artificial character of the citation in Athenagoras is a sufficient reason for mistrusting it; even in the short saying of Archænetus (or Archytas) the language and standpoint of a later period are clearly discernible;[1] and lastly, in a passage said to be from Aristotle, a definition of matter is attributed to Pythagoras himself, which, in accordance with the doctrine of the older academy, presupposes the distinction between form and matter,[2] evidently showing either that the writing is itself a forgery, or that it contains a false statement. The expositions, too, which Sextus and Alexander Polyhistor have followed, bear unmistakeable marks of the eclecticism which after the second half of the second century before Christ began to blend the philosophical systems together, and to confuse the ancient with the recent.[3] For these reasons the testimonies in question are valueless; and neither the doctrine of Unity and indefinite Duality, nor the identification of the primal Unity with Deity, and all that depends upon it, can any longer be attributed to the ancient Pythagoreans.

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[1] The *language*, for this use of αἰτία without any particular qualification, is first found in Plato and Aristotle, and presupposes their enquiries concerning the idea of cause: the *point of view*, for in the expression αἰτία πρὸ αἰτίας the divinity is elevated above all cosmic principles in a manner never known before the time of the Neo-Pythagoreans.

[2] Damasc. *De Princ. Arist. Fragm.* 1514 a, 24: Ἀριστοτέλης δὲ ἐν τοῖς Ἀρχυτείοις ἱστορεῖ καὶ Πυθαγόραν ἄλλο τὴν ὕλην καλεῖν ὡς ῥευστὴν καὶ ἀεὶ ἄλλο γιγνόμενον. Chaignet, ii. 73 sq. takes this as certain. In my opinion, the circumstance that Aristotle is here affirming something about the doctrine of Pythagoras, and above all, the substance of this affirmation, clearly seems to show either that the work on Archytas (of which we do not possess elsewhere the smallest fragment) was spurious; or else that Damascius had wrongly attributed to Pythagoras what was said in that work, and was, perhaps, only known to Damascius at third hand. What he makes Pythagoras say could not even have been said by the Pythagoreans, before Plato. Aristotle, on the other hand, tells us (*Metaph.* xiv. 1087 b, 26) that certain Platonists opposed to the ἓν the ἕτερον and the ἄλλο as the material principle; and Ps. Alex. (777, 22 Bon.) applies this assertion to the Pythagoreans. It would seem that the statement of Damascius, or of the work used by him, has occasioned a similar misunderstanding.

[3] This is especially evident in Sextus. Even the dialectic charac-

Among the later Pythagoreans whose tendencies were Platonic, Unity and Duality, as we see from what has been quoted above, play an important part; but among the earlier philosophers, Plato is the first who can be proved to have employed them, and the Aristo-

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ter of his argument definitely indicates a recent date. Moreover, not only the Atomists, but Epicurus and Plato, are mentioned by name, and allusion is made to their works (*P.* iii. 152; *M.* x. 252, 257, 258). We find in *Math.* vii. 107, a very improbable anecdote of the sculptor of the Colossus of Rhodes, a pupil of Lysippus. Contrary to all the statements of Aristotle, the separation of numbers from things, and the participation of things in numbers (*M.* x. 263 sqq., 277; vii. 102), are attributed not merely to the Pythagoreans, but to Pythagoras himself (*P.* iii. 153; *M.* x. 261 sq.). The Pythagoreans are represented as freely making use of Pythagorean and even of Aristotelian categories. There is no doubt, therefore, that this exposition is of recent date, and quite untrustworthy, and that the defence of it, which Marbach (*Gesch. d. Phil.* i. 169) has attempted, superficially enough, is altogether inadmissible. In the exposition of Alexander these recent elements are less striking, but, nevertheless, they are unmistakeable. At the very commencement of the extract which he gives, we find the Stoic and Aristotelian distinction of matter and efficient cause. This distinction, as with the Stoics, enters even into the One primitive essence. Further on, we find the Stoic doctrine of the universal transformation of matter (*τρέπεσθαι δι' ὅλων*), a doctrine which is wholly foreign to the ancient Pythagorean cosmology, as will presently be shown; then the Stoic conceptions of the *εἱμαρμένη*, of the identity of the Divine with the vital warmth or æther; its immanence in things (*διήκειν*), and the kinship of men with the Divine, which is founded upon this immanence. We also find the Stoical notions of the propagation of souls, an analogous opinion to that of the Stoics on sensation, and the purely Stoical theory, according to which the faculties of the soul are resolved into currents of air (*τοὺς λόγους ψυχῆς ἀνέμους εἶναι*). These traits sufficiently prove the impossibility of regarding the exposition of Alexander as an ancient Pythagorean document. Other details will be given further on.

telian passages which might seem to ascribe them to the Pythagoreans, and which were constantly explained in this sense by the ancient commentators, relate entirely to Plato and the Academy.[1] Neither in Alexander's excerpts from Aristotle's work on the Good,[2] in which the Platonic doctrine of Unity and indefinite Duality is developed at length, nor in what Porphyry[3] says on the same subject, are the Pythagoreans mentioned;[4] and though Theophrastus once alludes to indefinite Duality, after previously naming the Pythagoreans together with Plato, the brevity with which he sums up the doctrines of both prevents our drawing any inference from this allusion. Moreover, according to the statements of Alexander and Porphyry, Plato places this doctrine in close connection with the theory of the Great and Small, which Aristotle declares categorically to be a conception peculiar to Plato and unknown to the Pythagoreans.[1] Aristotle and Philolaus always cite the odd and the even, or the limited and unlimited, and these alone as elements of number.[2] Even where Aristotle speaks of numbers being produced from the One,[3] he understands by the One only the number one and never adds to it duality, which he could not possibly have omitted if the One were incapable of producing number except in combination with duality; lastly, many authorities expressly deny that the Pythagoreans held the theory of Unity and Duality.[4] It may be considered almost unquestionable then that this doctrine did not belong to the ancient Pythagoreans.[5] The subsequent interpretations which identify the One with Deity, and Duality with matter, are utterly to be discarded. For this radical distinction of the corporeal and spiritual, of matter and efficient force, is quite at variance with the theory which chiefly determines the character of Pythagoreanism, viz. that numbers are the essence of which things consist. If once a discrimination were admitted between matter and the formal principle, numbers would become, like the Platonic ideas, mere forms, and could no longer be considered as the substantial elements of the corporeal. Such a distinction, however, is only ascribed to the Pythagoreans by writers to whose evidence, as we have seen, very limited credence can be given. Aristotle on the contrary emphatically declares[1] that Anaxagoras was the first philosopher who discriminated spirit from matter, and he on this account includes the Pythagoreans among those who recognised only sensible existence.[2] But most of the statements that have come down to us respecting the Pythagorean doctrine of the divinity are immediately connected with the theory of Unity and Duality, of spirit and matter. The divinity seems to have been conceived partly as the first term of this opposition, and partly as the higher unity which precedes the opposition, engenders the two opposing elements as such, and brings about their union. If, therefore, this discrimination was first added to Pythagoreanism by the later adherents of the school, the same must have been the case in regard to the Pythagorean conception of God; and the question is whether the idea of God had generally any philosophic import for the Pythagoreans, and especially, whether it was involved in their theory of ultimate causes. This question cannot be answered by an appeal to the religious character of Pythagoreanism, nor by the citation of passages, which express, in a religious form, the dependance of all things on God, the duties of Divine worship, the greatness, and the attributes of God; for we are not at present concerned with the enquiry how far the Pythagorean theology co-existed side by side with the Pythagorean philosophy, but how far it had any logical connection with the philosophic doctrines of the school; whether, in short, the idea of God was deduced by the Pythagoreans from their philosophic theory of the universe, or was used by them to explain it.[1] General as this latter assumption may be, it appears to me unfounded. The Deity, it is thought by some, was distinguished by the Pythagoreans as absolute unity, from unity conceived as in opposition, or from the limit; consequently, it was also distinguished from the world, and exalted above the whole sphere of opposites.[2] Others say[3] that the first one,

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[1] *Metaph.* xiii. 6, 1080 b, 6. The commencement of the chapter shows clearly that there is no question in this passage of the Pythagoreans. Aristotle only speaks of them in the sequel, and in reference to something else. It is the same with the passage, c. 7, 1081 a, 14 sqq.; 1082 a, 13. This whole chapter treats solely of the Platonic theory of numbers. Lastly, xiv. 3, 1091 a, 4, also refers to Plato, and to him only.

[2] *Comment. on Met.* i. 6, p. 41, 32 sq. Bon.; and Simpl. *Phys.* 32 b; 104 b.

[3] Ap. Simpl. *Phys.* 104 b.

[4] *Met.* (Frag. 12, Wimm.) 33, p. 322, 14 Brand.: Πλάτων δὲ καὶ οἱ Πυθαγόρειοι, μακρὰν τὴν ἀπόστασιν ἐπιμιμεῖσθαί γε θέλειν ἅπαντα· καίτοι καθάπερ ἀντίθεσίν τινα ποιοῦσι τῆς ἀορίστου δυάδος καὶ τοῦ ἑνός· ἐν ᾗ καὶ τὸ ἄπειρον καὶ τὸ ἄτακτον καὶ πᾶσα ὡς εἰπεῖν ἀμορφία καθ' αὑτήν. ὅλως δὲ οὐχ οἷόν τε ἄνευ ταύτης τὴν τοῦ ὅλου φύσιν [εἶναι], ἀλλ' οἷον ἰσομοιρεῖν τῆς ἑτέρας ἢ καὶ τὰς ἀρχὰς ἀναντίας. This is the reading adopted by Brandis. Wimmer has: τὰς ἑτέρας &c. Perhaps the right reading of the passage may be: ἰσομοιρεῖν τ. ἀρχ. ἐναντίας ἢ καὶ ὑπερέχειν τὴν ἑτέραν. διὸ καὶ οὐδὲ τὸν θεὸν, ὅσοι τῷ θεῷ τὴν αἰτίαν ἀνάπτουσι, δύνασθαι πάντ' ἐπὶ τὸ ἄριστον ἄγειν, ἀλλ' εἴπερ, ἐφ' ὅσον ἐνδέχεται· τάχα δ' οὐτ' ἂν προέλοιτ', εἴπερ ἀναιρεῖσθαι συμβήσεται τὴν ὅλην οὐσίαν ἐξ ἐναντίων γε καὶ [ἐν] ἐναντίοις οὖσαν. The last words, beginning at τάχα, are most likely added by Theophrastus himself, but in the whole text there is such a mixture of Pythagoreanism and Platonism that it seems impossible to determine from this passage alone what was peculiar to each of the two factors.

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[1] *Metaph.* i. 6, 987 b, 25: *τὸ δὲ ἀντὶ τοῦ ἀπείρου ὡς ἑνὸς δυάδα ποιῆσαι καὶ τὸ ἄπειρον ἐκ μεγάλου καὶ μικροῦ, τοῦτ' ἴδιον* (sc. Πλάτωνι). *Phys.* iii. 4, 203 a, 10: *οἱ μὲν* [Πυθαγόρειοι] *τὸ ἄπειρον εἶναι τὸ ἄρτιον . . . Πλάτων δὲ δύο τὰ ἄπειρα, τὸ μέγα καὶ τὸ μικρόν*; cf. *ibid.* iii. 6, 206 b, 27. The first of these passages does not directly assert that the Pythagoreans were not acquainted with the dyad, that is to say, the *δυὰς ἀόριστος*, but that they were unacquainted with the dyad of the Great and Small.

[2] Vide *supra*, p. 377.

[3] *Metaph.* i. 5, vide *supra*, p. 378, 1. Cf. the remarks, xiii. 8, 1083 a, 20; xiv. i. 1087 b, 7; c, 4, 1091 b, 4, relative to an opinion similar to that of the Pythagoreans. It is clear from the text, xiii. 8, 1083 a, 36 sq., that it is not the Pythagorean opinion itself.

[4] Theo. *Smyrn.* i. 4, p. 26: *ἁπλῶς δὲ ἀρχὰς ἀριθμῶν οἱ μὲν ὕστερόν φασι τήν τε μονάδα καὶ τὴν δυάδα· οἱ δὲ ἀπὸ Πυθαγόρου πάσας κατὰ τὸ ἑξῆς τὰς τῶν ὅρων ἐκθέσεις, δι' ὧν ἄρτιοί τε καὶ περιττοὶ νοοῦνται, οἷον τῶν ἐν αἰσθητοῖς τριῶν ἀρχὴν τὴν τριάδα* &c. Ps.-Alex. *in Metaph.* xiv. 1, p. 775, 29; *ibid.* 776, 9: *τοῖς μὲν οὖν περὶ Πλάτωνα γεννῶνται οἱ ἀριθμοὶ ἐκ τῆς τοῦ ἀνίσου δυάδος, τῷ δὲ Πυθαγόρᾳ ἡ γένεσις τῶν ἀριθμῶν ἐστιν ἐκ τοῦ πλήθους.* Similarly Syrian *ad h. l. Schol.* 926 a, 15.

[5] Vide Brandis, *De perd. Arist. libr.* p. 27; Ritter, *Pythag. Phil.* 133; Wendt. *De rer. princ. sec. Pyth.* 20 sq.; and others. Böckh, on the contrary, regarded the One and indeterminate Duality as belonging to the Pythagorean doctrine (*Philol.* 55); and Schleiermacher considers those two principles as synonymous with God and matter, the principle determining and the principle determined (*Geschich. der Phil.* p. 56).

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[1] *Metaph.* i. 3, 984 b, 15.

[2] Vide *supra*, p. 189.

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[1] It is no refutation of my views to say, as Heyde says (*Ethices Pythagoreæ Vindiciæ*, Erl. 1854, p. 25), that every philosopher borrows considerably from common opinion. The opinions which a philosopher derives from this source are only to be considered part of his philosophic system if they are in some way connected with his scientific views. Apart from these, they are merely personal opinions, immaterial to the system; as, for example, the pilgrimage of Descartes to Loretto is immaterial to Cartesianism. Heyde likewise maintains, *ibid.*, that we ought only to leave out from a philosophic system such points as the author of the system expressly declares not to belong to it. This would at once render any discrimination of the essential and the accidental in such matters impossible.

[2] Böckh, *Phil.* 53 sq.; Brandis, i. 483 sq.

[3] Ritter, *Pythag. Phil.* 113 sq., 119 sq., 156 sq.; *Geschich. d. Phil.* i. 387 sq., 393 sq.; Schleiermacher, *loc. cit.*

or the limited, was at the same time apprehended as Deity. This, however, is asserted only by Neo-Pythagorean and Neo-Platonic authorities, and in fragments of interpolated writings emanating from the same circle.[1] Aristotle, in the various passages where he expounds the Pythagorean theory of the ultimate reasons of things, never says a word about their doctrine of God.[1] Theophrastus even seems to draw an

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[1] Besides the fragments already quoted, the fragment of Philolaus, περὶ ψυχῆς, ap. Stob. i. 420 (Böckh, *Philol.* 163 sq.), is, in my opinion, in the same case. It bears so many marks of a recent origin that I cannot consider it authentic, nor can I even adopt as probable Böckh's theory (defended by Brandis, *Geschich. d. Entw.* i. 173 sq.) that the foundation was authentic, but that something has been added by one authority in quoting it. The very commencement recalls the Timæus of Plato (33 A sq.; 34, B) and still more Ocellus Lucanus, c. i. 11. The words (p. 422), τὸ δ' ἐξ ἀμφοτέρων τούτων, τοῦ μὲν ἀεὶ θέοντος θείου, τοῦ δὲ ἀεὶ μεταβάλλοντος γεννατοῦ κόσμως, remind us in the most striking manner of the text, c. 2, *sub fin.* of Ocellus Lucanus, and the Cratinus of Plato, 397 C. To dispose of this coincidence (Chaignet, ii. 81) by the substitution of ἐόντος for θέοντος would in itself be arbitrary and unjustifiable, even if the θεῖον had not been designated previously as the ἀεικίνατον, which ἐξ αἰῶνος εἰς αἰῶνα περιπολεῖ (cf. § iv. *Cosm.*). The eternity of the world (and not merely its *endless duration*, as Brandis, *loc. cit.*, maintains; the words are: ἇς ὅδε ὁ κόσμος ἐξ αἰῶνος καὶ ἐς αἰῶνα διαμένει), which is taught in the fragment in question, a favourite theme of the Neo-Pythagoreans, was, according to all the indications of Aristotle, introduced into Philosophy by Plato's idea of the world-soul. These two doctrines were, as we shall presently see (§ iv. *Cosm.*), unknown to the true Pythagoreans; and, indeed, what our author says of the world-soul presents in its details a decidedly Platonic and Aristotelian character, while Pythagorean theories, properly so-called, are wholly wanting. The discrimination made by the pseudo-Philolaus between the world above the moon, which he calls the ἀμετάβλητον or ἀεικίνητον, and the world below the moon, which he calls the μεταβάλλον, or ἀειπαθὲς, doubtless resembles the Pythagorean ideas, but the manner in which it is apprehended has greater affinity with Aristotle (cf. for example, what is quoted Part ii. b, 331, 3; 338 sq., second edition), and especially the treatise Π. κόσμου, c, 2, 392 a, 20 sq. The influence of the Aristotelian terminology is unmistakeable in these words: κόσμον ἦμεν ἐνέργειαν ἀΐδιον θεῶ τε καὶ γενέσιος κατὰ συνακολουθίαν τᾶς μεταβλαστικᾶς φύσιος. The opposition of the κατὰ τὸ αὐτὸ καὶ ὡσαύτως ἔχον and the γινόμενα καὶ φθειρόμενα πολλὰ does not belong, it is certain, to the epoch anterior to Plato: the observation that by means of generation the perishable receives its form in an imperishable manner is found even in Plato and Aristotle, and seems to presuppose the distinction made by both these philosophers between form and matter.

Lastly, Böckh remarks that the closing words, τῷ γεννήσαντι πατέρι καὶ δημιουργῷ, are derived from Timæus, 37 C; but we can scarcely for this reason attribute them to the person who reports them. Admitting that some of these coincidences cannot be explained except on the theory of an interpolation, it would still be very difficult to believe in the authenticity of this work when we consider how much is united there, which, striking enough, *per se*, is inconceivable in combination, except on the supposition that the work is of recent date. Rohr (*De Philol. Frag.*, περὶ ψυχῆς, Lpz. 1874, p. 12 sq.) thinks that by sacrificing the last sentences from the words διὸ καὶ καλῶς ἔχει, he can save the rest as a work of Philolaus; but this is a vain attempt, as I shall prove, in reference to the most decisive points—the eternity of the world and the world-soul. But if this fragment is interpolated, there is no reason to suppose that the Φιλόλαος ἐν τῷ περὶ ψυχῆς, from which it is borrowed, according to Stobæus, is the third volume of the known work of Philolaus. Böckh and Schaarschmidt assert this—the former (*loc. cit.*) on the pre-supposition that the fragment is authentic; the latter believing that none of the fragments of Philolaus are so. It is probable that this treatise was a separate work, distinct from the source of the authentic fragments. Claudianus Mamertus probably had it before him in his confused statements, *De Statu An.* ii. 7, quoted by Böckh, *Philol.* 29 sqq., and he most likely borrows from it what we shall cite further on. But this only proves that the book was known by this writer of the fifth century A.D., and regarded by him as an authentic work of Philolaus; and even if, in the manuscript he was using, it was joined with Philolaus' real work, this is no proof of its authenticity.

[1] It is said in *Metaph.* xiii. 8, 1083 a, 20, that numbers are the primitive element, καὶ ἀρχὴν αὐτῶν εἶναι αὐτὸ τὸ ἕν, but this One is not designated as the Divinity; and besides, the passage is not concerned with Pythagoreans, but with a fraction of the Platonists who followed the doctrines of Pythagoras. Similarly, *Metaph.* xiv. 4, 1091 b, 13 sqq., when Aristotle speaks of those who identify the Absolute One with the Absolute Good (αὐτὸ τὸ ἓν τὸ ἀγαθὸν αὐτὸ εἶναί φασιν), he means the adherents of the theory of Ideas, as is proved by the expressions αὐτὸ τὸ ἕν, ἀκίνητοι οὐσίαι, μέγα καὶ μικρὸν (l. 32). This opinion is the view of the Platonists; vide Schwegler and Bonitz *ad. h. l.* and Zeller, *Plat. Stud.* p. 278. In a third text, *Metaph.* i. 5 (vide *supra*, p. 379, 1; cf. xiii. 6, 1080 b, 31: τὸ ἓν στοιχεῖον καὶ ἀρχήν φασιν εἶναι τῶν ὄντων) it is said that the Pythagoreans deduce numbers from the One; but this is the number one which cannot be the Divinity, because it must itself result from the Odd and Even. Ritter (*Gesch. d. Phil.* i. 388) makes, in reference to this point, the following objection: As number, that is to say,

express distinction[1] between the Pythagoreans and those who represent the Deity as efficient cause.[2] Philolaus indeed calls the one the beginning of all things,[3] but he can scarcely mean anything more by this than what Aristotle says: viz., that the number one is the root of all numbers, and therefore, since all things consist of numbers, it is also the principle of all things.[4] He further describes God as the sole

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the 'Even and the Odd,' only results from the One, the One cannot have resulted from these: the words *ἐξ ἀμφοτέρων τούτων* do not therefore signify *derived* from both, but *consisting* of both. This objection is based upon a manifest confusion: the Even and Odd *number* is not *the Even and the Odd*; the expression, 'that is to say,' is consequently not legitimate, and the only sense which the words of Aristotle can have, according to the context, is the following: first, the One arises out of the Odd and the Even, and then the other numbers proceed from the One. Vide Alexander *ad h. l.* Lastly, in *Metaph.* xiii. 6, 1080 b, 20; xiv. 3, 1091 a, 13, the first corporeal unity is spoken of, but it is characterised very distinctly as derived, for in xiv. 3, we read, *οἱ μὲν οὖν Πυθαγόρειοι πότερον οὐ ποιοῦσι ἢ ποιοῦσι γένεσιν* [*τοῦ ἑνὸς*] *οὐδεῖ διστάζειν· φανερῶς γὰρ λέγουσιν, ὡς τοῦ ἑνὸς συσταθέντος εἴτ' ἐξ ἐπιπέδων εἴτ' ἐκ χροιᾶς εἴτ' ἐκ σπέρματος εἴτ' ἐξ ὧν ἀποροῦσιν εἰπεῖν, εὐθὺς τὸ ἔγγιστα τοῦ ἀπείρου ὅτι εἵλκετο καὶ ἐπεραίνετο ὑπὸ τοῦ πέρατος.* Here, again, I am obliged to contradict the remark of Ritter (*loc. cit.*) 389 that, according to the text, *Met.* xiii. 6, this One cannot be anything derived. But Aristotle in that place simply says: *ὅπως τὸ πρῶτον ἓν συνέστη ἔχον μέγεθος ἀπορεῖν ἐοίκασιν.* In the first place this does not mean that they regard the One as not derived, but that the problem of its derivation puzzles them; whence it would rather follow that this problem is based upon their other definitions in respect to the One. In the second place, the question in this passage is not whether Unity in general is derived from first principles, but whether the origin of the first *corporeal* unity, as such, the formation of the first body in the midst of the universe (that is to say, the central fire), has been explained in a satisfactory manner.

[1] In the passage quoted, p. 395, 4.

[2] Plato and his School. Cf. the words: *διὸ καὶ οὐδὲ τὸν θεὸν* &c., *Tim.* 48 A; *Theæt.* 176 A.

[3] In the fragment ap. Iambl. *in Nicom.* 109 (cf. Syrian *in Metaph. Schol.* 926 a, 1; vide *supra*, p. 391, 2, and Böckh, *Philol.* 149 sq.), the authenticity of which, indeed, is not quite certain, though there is nothing absolutely against it: *ἓν ἀρχὰ πάντων.*

[4] It is thus that the biographer in Photius *Cod.* 249 a, 19, understands the passage: *τὴν μονάδα πάντων ἀρχὴν ἔλεγον Πυθαγόρειοι,*

ruler of the universe, exalted above all things,[1] embracing all things with his care;[2] but this proves nothing in respect to the philosophic import of the concept of God in his system. For the first of these propositions, if it really comes from Philolaus,[3] merely

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ἐπεὶ τὸ μὲν σημεῖον ἀρχὴν ἔλεγον γραμμῆς, τὴν δὲ ἐπιπέδου, τὸ δὲ . . σώματος. τοῦ δὲ σημείου προεπινοεῖται ἡ μονὰς, ὥστε ἀρχὴ τῶν σωμάτων ἡ μονάς. If even these words referred to the Divinity, it would be necessary to know the connection in which they stand, in order to say whether the One is here designated as the Divinity, or if the sense is not simply this: 'One thing is the beginning of all other things, and this one thing is the Divinity.' In the first case only would the passage have a philosophic bearing; in the second it would be a religious proposition, such as we find elsewhere (*e.g.* in Terpander, vide *supra*, p. 122).

[1] Philo, *mundi opif.* 23 A: *μαρτυρεῖ δέ μου τῷ λόγῳ καὶ Φιλόλαος ἐν τούτοις· ἐστὶ γάρ, φησιν, ὁ ἡγεμὼν καὶ ἄρχων ἁπάντων θεὸς εἷς, ἀεὶ ὢν, μόνιμος, ἀκίνητος, αὐτὸς αὑτῷ ὅμοιος, ἕτερος τῶν ἄλλων.* The Pythagorean conception of God is similarly expounded in Plut. *Numa*, c. 8.

[2] Athenag. *Supplic.* c. 6: *καὶ Φιλόλαος δὲ ὥσπερ ἐν φρουρᾷ πάντα ὑπὸ τοῦ θεοῦ περιειλῆφθαι λέγων*, cf. Plato, *Phædo*, 62 B: the *λόγος ἐν ἀποῤῥήτοις λεγόμενος, ὡς ἔν τινι φρουρᾷ ἐσμεν οἱ ἄνθρωποι* is hard to understand, *οὐ μέντοι ἀλλὰ τόδε γέ μοι δοκεῖ . . . εὖ λέγεσθαι, τὸ θεοὺς εἶναι ὑμῶν τοὺς ἐπιμελομένους καὶ ἡμᾶς τοὺς ἀνθρώπους ἓν τῶν κτημάτων τοῖς θεοῖς εἶναι.*

[3] This is not guaranteed quite certainly by the assertion of Philo; for the Jewish and Christian Alexandrians often avail themselves of falsified writings to prove Monotheism. Böckh also conjectures that the passage may not be a verbal quotation; but there are no decisive proofs of its spuriousness, for I cannot consider the *αὐτὸς αὑτῷ ὅμοιος*, &c., as 'Post Platonic modern categories' (Schaarschmidt, *Schrifst. des Philol.* 40). The proposition that the universe or the Divinity is *ἀεὶ ὅμοιον, πάντῃ ὅμοιον* is attributed already to Xenophanes. Parmenides calls Being *πᾶν ὅμοιον* (vide *infra*, *Parm.*). Moreover, the opposition of the *αὑτῷ ὅμοιος, ἕτερος τῶν ἄλλων* does not presuppose more dialectic culture than the opposition *ἑωυτῷ πάντοσε τωὐτὸν, τῷ δ' ἑτέρῳ μὴ τωὐτὸν* (*Parm.* v. 117, in relation to one of Parmenides' elements), and not nearly so much as the arguments of Zeno against Multiplicity and Motion. If it be objected that a strict Monotheism is incompatible with the theological point of view of the Pythagoreans, we may fairly enquire whether the fragment is to be understood in this sense, and whether the expression *ἡγεμὼν καὶ ἄρχων ἁπάντων θεὸς* excludes other gods. It may be that this fragment only presents to us that belief in a supreme God which we find before and contemporary with Philolaus, in Æschylus, Sophocles, Heracleitus, Empedocles, and others, and which was not incompatible with Polytheism.

expresses in a religious form a thought which was then no longer confined to the schools of philosophy, and which sounds more like the language of Xenophanes than anything peculiarly Pythagorean. The second proposition taken from the Orphico-Pythagorean mysteries[1] is entirely of a religious and popular nature.[2] Neither one nor the other is employed as the basis of philosophic definitions. If, lastly, Philolaus asserted that the Deity brought forth limit and unlimitedness,[3] this certainly presupposes that all is to be referred to the Divine causality; but as no account is given how God brought forth the first causes, and how he is related to them, this theorem merely bears the character of a religious presupposition. From a philosophic point of view it merely shows that Philolaus knew not how to explain the origin of the opposition of the Limited and Unlimited. He seems to think that they, as he says in another place of harmony,[4] arose in some way which it is impossible accurately to define. Even in the time of Neo-Pythagoreanism the prevailing distinction of the supra-mundane One from the Monad was not universally acknowledged.[5] We cannot but admit, therefore, that the Pythagoreans believed in gods. It is also probable that they followed the monotheistic tendency (which after the time of Xenophanes exercised such an important influence on Greek philosophy) so far as amidst the plurality of gods to proclaim, with greater emphasis than the popular religion, the unity (ὁ θεὸς, τὸ θεῖον);[1] at the same time, however, the import of the idea of God in relation to their *philosophic* system seems to have been small,[2] nor does it appear to have been closely interwoven with their enquiry concerning the first principles of things.[3]

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[1] This clearly appears from Plato, *loc. cit.*

[2] Here again it may be questioned whether Athenagoras exactly reproduces the words that he quotes, and if instead of τοῦ θεοῦ, the original text may not have contained τῶν θεῶν, as in Plato. We are not even sure whether the quotation is from the work of Philolaus at all. It may be merely a vague reminiscence of the passage in Plato.

[3] According to Syrian, vide *supra*, p. 389, 3, whose testimony is confirmed by the evidence of Plato in the *Philebus*, 23 C (*supra*, p. 379, 1). On the other hand, Proclus, *Plat. Theol.* p. 132, only quotes as coming from Philolaus the proposition that all consists of the Limited and Unlimited. The proposition that God has engendered these elements he gives as Platonic.

[4] Vide *supra*, p. 383, 2.

[5] *Supra*, p. 375; cf. p. 391, 2.

I am consequently the less able to believe that the Pythagoreans taught a development of God in the universe, by which He gradually arrived at perfection through imperfection.[4] This theory is closely connected with the statement that they held the One to be the Deity. For the One is described as the Even-Odd, and as the Odd is the perfect, and the Even the imperfect, so, it is argued, they supposed not only the perfect but the imperfect, and the reason of imperfection, to be in God, and accordingly held that the perfect good can only arise from a development of God. I must protest against such an inference, if only upon the ground that I dispute the identity of the One with the Deity. But even irrespectively of this, it could not be true, for though the number one was called by the Pythagoreans the even-odd, the One which is opposed as one of the primitive causes to indefinite Duality is never so called,[1] and never could he; and the number one, as that which is derived from the primitive causes, and compounded of them, could in no case be identified with the Deity.[2] Aristotle certainly says that the Pythagoreans, like Speusippus, denied that the fairest and best could have existed from the beginning;[3] and as he mentions this theory in connection with his own doctrine of the eter-

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[1] But certainly in connection with the popular belief; so that for them, as for the generality of people, the θεῖον is identical with Zeus. Cf. their theories as to the oversight exercised by Zeus and all connected with it.

[2] Böckh, *Phil.* 148, observes that without the theory of a higher Unity, above the Limited and Unlimited, there would remain no trace in the system of the Pythagoreans, renowned as they were for their religious ideas, of the Divinity. This remark does not prejudice my opinion in the least. I do not deny that they reduced everything to the Divinity, but I contend that in so doing, they did not proceed in a scientific manner; and this seems to me the easier to understand, because by virtue of their religious character, this dependance of all things in respect to the Divinity was for them an immediate postulate, and not a scientific problem. Röth (ii. a, 769 sqq.) himself, repugnant as this assertion naturally is to him, is obliged to confess that the sacredness and inviolability of Pythagoras' circle of ideas, in regard to religious speculation, left little room for the free intellectual development of his school; and that among the writings (authentic according to Röth) left to us by the Pythagoreans, there is none which has properly a speculative character; but that they are all religious and popular works. Is not this to say, as I do, that theological convictions here appear primarily as the object of religious faith, and not of scientific enquiry?

[3] Cf. what is said in the next section on the theory that the Pythagoreans taught the existence of a world-soul.

[4] Ritter, *Pyth. Phil.* 149 sqq.;

Gesch. d. Phil. 398 sqq., 436; against Ritter, vide Brandis, *Rhein. Mus.* of Niebuhr and Brandis, ii. 227 sqq.

[1] Not even in Theophrastus (*supra*, p. 395, 4). The statements of Theophrastus would prove nothing in regard to this question, even if they could as a whole be considered as applying to the Pythagoreans. For it does not follow, because God is unable to conduct all things to perfection, that he is, therefore, himself imperfect. Otherwise he would be imperfect more especially with Plato, to whom this assertion originally belongs.

[2] Cf. p. 400, 1.

[3] *Metaph.* xii. 7, 1072 b, 28: φαμὲν δὲ τὸν θεὸν εἶναι ζῷον ἀΐδιον ἄριστον . . . ὅσοι δὲ ὑπολαμβάνουσιν, ὥσπερ οἱ Πυθαγόρειοι καὶ Σπεύσιππος, τὸ κάλλιστον καὶ ἄριστον μὴ ἐν ἀρχῇ εἶναι, διὰ τὸ καὶ τῶν φυτῶν καὶ τῶν ζῴων τὰς ἀρχὰς αἴτια μὲν εἶναι, τὸ δὲ καλὸν καὶ τέλειον ἐν τοῖς ἐκ τούτων, οὐκ ὀρθῶς οἴονται. The ethical interpretation of this passage, attempted by Schleiermacher (*Gesch. d. Phil.* 52), is not worth discussing.

nity of God, it has the appearance of having also been applied by the Pythagoreans to the notion of Deity. In the first place, however, it does not at all necessarily follow from this that the Divinity was at first imperfect, and afterwards attained to perfection. As Speusippus concluded from this proposition that the One as the first principle must be distinct from the good and from the Deity,[1] so the Pythagoreans may in like manner have separated them.[2] But it is also a question whether the theorem which Aristotle disputes was ever advanced by the Pythagoreans with respect to the Deity; for Aristotle does not always quote the definitions of the earlier philosophers quite in the connection in which their authors originally stated them, as may be proved by numerous examples.[3] We do not know what sense may have been given to this proposition in the Pythagorean system. It may have referred to the development of the world from a previous state of imperfection, or to the production of the perfect number (the decad) from the less perfect;[4] or to the position of the good in the table of opposites,[5] or to some other object. We are not therefore justified by this Aristotelian passage, in ascribing to the Pythagoreans a doctrine which not only contradicts Philolaus' representation of the Deity, but is quite unknown to antiquity;[1] though, if it had really existed among the Pythagoreans, it might on that very account be expected to receive all the more definite mention from the ancient writers.

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[1] Vide the chapter on Speusippus, Part ii. a, 653 sq. 2 A.

[2] This is also the opinion which Aristotle attributes to them when he says that they did not consider the One as the Good itself, but as a certain kind of good. *Eth. N.* i. 4, 1096 b, 5: *πιθανώτερον δ' ἐοίκασιν οἱ Πυθαγόρειοι λέγειν περὶ αὐτοῦ, τιθέντες ἐν τῇ τῶν ἀγαθῶν συστοιχίᾳ τὸ ἓν* (in the table of the ten contradictories) *οἷς δὴ καὶ Σπεύσιππος ἐπακολουθῆσαι δοκεῖ.*

[3] Chaignet, ii. 103, identifies the Pythagoreans with those theologians who, according to *Metaph.* xiv. 4, 1091 a, 29 sqq., maintained that *αὐτὸ τὸ ἀγαθὸν καὶ τὸ ἄριστον* are *ὑστερογενῆ*, and that they only appeared in the course of the development of the cosmos. But it results from the preceding context, as well as from the expression *αὐτὸ ἀγαθὸν*, that the Platonists are here intended (Speusippus). Aristotle explicitly says: *παρὰ τῶν θεολόγων τῶν νῦν τισιν.*

[4] As Steinhart says, *Plato's Werke*, vi. 227.

[5] Cf. note 2.

Having in the foregoing pages opposed the theologico-metaphysical interpretation of the Pythagorean first principles, I must now declare myself no less strongly against the theory that these principles primarily refer to space-relations, and side by side with the arithmetical element, or instead of it, denote something geometrical, or even altogether material. Aristotle says the Pythagoreans treated numbers as space-magnitudes;[2] he often mentions the theory that geometrical figures are the substantial element of which bodies consist,[3] and his commentators go further, declaring that the Pythagoreans held mathematical figures to be the principle of the corporeal, and reduced them to points or units; that they regarded these units partly as something extended in space, and partly also as the constituents of numbers; and consequently taught that corporeal things consist of numbers.[1] We find similar thoughts among other writers of the later period,[2] though they do not precisely attribute them

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[1] The ancient philosophers, it is true, frequently maintain that *the world* was developed from a rudimentary and formless state, but never that the *Divinity* was developed. The doctrine of Heracleitus and the Stoics contained no such teaching. For the successive forms of the Divine essence are something entirely different from a development of that essence out of an imperfect state. The primitive fire which, as the germ of the world, is antecedent to the world, is here regarded as the most perfect existence, the *κόρος*. Lastly, if the Theogonies represent particular gods as generated, this doctrine cannot be directly transferred to the Deity, conceived as One.

[2] *Metaph.* xiii. 6, 1080 b, 18 sqq. after the quotation on p. 370, 1: *τὸν γὰρ ὅλον οὐρανὸν κατασκευάζουσιν ἐξ ἀριθμῶν, πλὴν οὐ μοναδικῶν, ἀλλὰ τὰς μονάδας ὑπολαμβάνουσιν ἔχειν μέγεθος· ὅπως δὲ τὸ πρῶτον ἓν συνέστη ἔχον μέγεθος, ἀπορεῖν ἐοίκασιν . . . μοναδικοὺς δὲ τοὺς ἀριθμοὺς εἶναι πάντες τιθέασι πλὴν τῶν Πυθαγορείων, ὅσοι τὸ ἓν στοιχεῖον καὶ ἀρχήν φασιν εἶναι τῶν ὄντων· ἐκεῖνοι δ' ἔχοντα μέγεθος.* Cf. next note, and what has been quoted p. 400, 1, from *Metaph.* xiv. 3.

[3] *Metaph.* vii. 2, 1028 b, 15: *δοκεῖ δέ τισι τὰ τοῦ σώματος πέρατα, οἷον ἐπιφάνεια καὶ γραμμὴ καὶ στιγμὴ καὶ μονὰς, εἶναι οὐσίαι μᾶλλον, ἢ τὸ σῶμα καὶ τὸ στερεόν*; iii. 5, 1002

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a, 4: *ἀλλὰ μὴν τό γε σῶμα ἧττον οὐσία τῆς ἐπιφανείας, καὶ αὕτη τῆς γραμμῆς, καὶ ἡ γραμμὴ τῆς μονάδος καὶ τῆς στιγμῆς· τούτοις γὰρ ὥρισται τὸ σῶμα, καὶ τὰ μὲν ἄνευ σώματος ἐνδέχεσθαι δοκεῖ εἶναι, τὸ δὲ σῶμα ἄνευ τούτων εἶναι ἀδύνατον. διόπερ οἱ μὲν πολλοὶ* &c. (vide *supra*, p. 369, 1), xiv. 3, 1090 a, 30 (*supra*, p. 370, 1), *ibid.* 1090 b, 5: *εἰσὶ δέ τινες οἳ ἐκ τοῦ πέρατα εἶναι καὶ ἔσχατα, τὴν στιγμὴν μὲν γραμμῆς, ταύτην δ' ἐπιπέδου, τοῦτο δὲ τοῦ στερεοῦ, οἴονται εἶναι ἀνάγκην τοιαύτας φύσεις εἶναι.* *De Cœlo*, iii. 1, 298 b, 33: *εἰσὶ δέ τινες, οἳ καὶ πᾶν σῶμα γεννητὸν ποιοῦσι, συντιθέντες καὶ διαλύοντες ἐξ ἐπιπέδων καὶ εἰς ἐπίπεδα.* Aristotle, however, seems to be thinking only of Plato, and quotes expressly the Timæus. At the end of the chapter, after having refuted this opinion, he says: *τὸ δ' αὐτὸ συμβαίνει καὶ τοῖς ἐξ ἀριθμῶν συντιθεῖσι τὸν οὐρανόν· ἔνιοι γὰρ τὴν φύσιν ἐξ ἀριθμῶν συνιστᾶσιν, ὥσπερ τῶν Πυθαγορείων τινές.* *Metaph.* xiv. 5, 1092 b, 11, can hardly refer to this subject. Vide Pseudo-Alex. ad. h. l.

[1] Alex. *in Metaph.* i. 6, 987 b, 33; p. 41 Bon.: *ἀρχὰς μὲν τῶν ὄντων τοὺς ἀριθμοὺς Πλάτων τε καὶ οἱ Πυθαγόρειοι ὑπετίθεντο, ὅτι ἐδόκει αὐτοῖς τὸ πρῶτον ἀρχὴ εἶναι καὶ τὸ ἀσύνθετον, τῶν δὲ σωμάτων πρῶτα τὰ ἐπίπεδα εἶναι (τὰ γὰρ ἁπλούστερά τε καὶ μὴ συναναιρούμενα πρῶτα τῇ φύσει) ἐπιπέδων δὲ γραμμαὶ κατὰ τὸν αὐτὸν λόγον, γραμμῶν δὲ στιγμαὶ, ἃς οἱ μαθηματικοὶ σημεῖα, αὐτοὶ δὲ μονάδας ἔλεγον . . . αἱ δὲ μονάδες ἀριθμοὶ, οἱ ἀριθμοὶ ἄρα πρῶτοι τῶν ὄντων.* Ps.-Alex. *in Metaph.* xiii. 6, p. 723 Bon.: *καὶ οἱ Πυθαγόρειοι δὲ ἕνα ἀριθμὸν εἶναι νομίζουσι, καὶ τίνα τοῦτον; τὸν μαθηματικὸν, πλὴν οὐ κεχωρισμένον τῶν αἰσθητῶν, ὡς οἱ περὶ Ξενοκράτην, οὐδὲ μοναδικὸν, τουτέστιν ἀμερῆ καὶ ἀσώματον (μοναδικὸν γὰρ τὸ ἀμερὲς καὶ ἀσώματον, ἐνταῦθα δηλοῖ), ἀλλὰ τὰς μονάδας καὶ δηλονότι καὶ τοὺς ἀριθμοὺς ὑπολαμβάνοντες μέγεθος ἔχειν ἐκ τούτων τὰς αἰσθητὰς οὐσίας καὶ τὸν ἅπαντα οὐρανὸν εἶναι λέγουσιν. ἔχειν δὲ τὰς μονάδας μέγεθος κατεσκεύαζον οἱ Πυθ. διὰ τοιούτου τινὸς λόγου. ἔλεγον οὖν ὅτι ἐπειδὴ ἐκ τοῦ πρώτου ἑνὸς αὗται συνέστησαν, τὸ δὲ πρῶτον ἓν μέγεθος ἔχει, ἀνάγκη καὶ αὐτὰς μεμεγεθυσμένας εἶναι.* In the other passages of the *Metaphysics* which we have quoted in the preceding notes, Alexander and his epitomiser do not speak of the Pythagoreans.

[2] Nikom. *Inst. Arithm.* ii. 6, p. 45; Boeth. *Arithm.* ii. 4, p. 1328; Nikom. ii. 26, p. 72, does not relate to this question.

to the Pythagoreans. Philolaus attempts to derive sometimes the corporeal in general, and sometimes the physical fundamental qualities of bodies from figures, and figures from numbers. From this Ritter concludes,[1] and Hermann[2] and Steinhart[3] agree with him, that the Limiting principle of the Pythagoreans was the unit, or, viewed in regard to space, the point; and the Unlimited, the interspace or the void; when, therefore, they said that all things consist of the Limit and the Unlimited, they meant that all things are composed of points and empty interspaces, and when they asserted that all things are number, this was only to express that these points together form a number. Reinhold[4] and Brandis[5] contest this, not because they maintain more strongly the arithmetical nature of the Pythagorean numbers, but because they would have them regarded as material; for in their judgment, the Pythagoreans understood by the Unlimited, the material cause of the corporeal,[6] and accordingly numbers, of which all things consist, must have been conceived by them as something corporeal: number, Reinhold considers, arises from the determination of the indeterminate matter by Unity or Limit, and things are called numbers because all things consist of a manifold element determined by Unity. Against this, Ritter rightly urges[7] that we ought to distinguish between the Pythagorean doctrines themselves and Aristotle's conclusions from them. The materiality of the Pythagorean numbers was first deduced by Aristotle from the doctrine that all is number;[1] the Pythagoreans can never have explained numbers and their elements as something corporeal; for Aristotle expressly says that they did not intend, by their concept of the Limited, the Unlimited and the One, to describe a substratum of which these concepts were predicated;[2] and this would unquestionably have been the case if the Unlimited had been, in their opinion, merely unlimited matter. He observes that the number of which all things consist must, according to their theory, have been mathematical number, and he charges them on this account with the contradiction of making bodies arise from the incorporeal, and the material from the immaterial.[3] This conclusion, however, can only be valid from an Aristotelian or some other later standpoint. To anyone accustomed to discriminate between corporeal and incorporeal, it must seem evident that bodies can only be compounded out of bodies, and so it inevitably follows that numbers and their elements must be something corporeal if bodies are to consist of them. The special characteristic of the Pythagorean Philosophy however lies in this, that such a distinction is as yet unrecognised, and that, in consequence, number as such is regarded not only as the form, but as the matter of the corporeal. Yet number itself is not on that account necessarily conceived as corporeal; for it is clear that qualities and relations which no one except the Stoics, or before their time, ever considered as bodies, were expressed in the Pythagorean Philosophy by numbers. The Pythagoreans not only defined man, or plants, or the earth by numbers, but asserted that two is opinion, four justice, five marriage, seven the opportune time, etc.[1] Nor is this simple comparison. The meaning in both cases is that the specified number is properly and directly the thing with which it is compared. It is a confounding of symbol and concept, a mixture of the accidental and the substantial, which we cannot discard without mistaking the essential peculiarity of Pythagorean thought. As we cannot assert that bodies were regarded as immaterial by the Pythagoreans, because, according to them, bodies consisted of numbers, so neither, on the other hand, can we infer that numbers must have been something corporeal, because they could not otherwise have been the elements of bodies. Bodies meant to them all that presents itself to the sense-perception; numbers meant that which is apprehended by mathematical thought; and the two things were directly identified, while the inadmissibility of such a procedure was unnoticed. For similar reasons, it is of no avail to prove that the One, the Unlimited and the Void receive a material signification in the Pythagorean physics. We read, it is true, that in the forming of the world, the nearest part of the Unlimited became attracted and limited by the first One,[1] and that outside the world was the Unlimited, from which the world inhaled empty space and time.[2] In this connection the One certainly appears as material unity, and the Unlimited to some extent as unlimited space, to some extent also as an infinite mass; but it by no means follows that the two conceptions have always the same meaning apart from this order of ideas: on the contrary, we have here an instance of what we so often find with the Pythagoreans—that a general conception receives a special determination from its application to a particular case, although this determination does not on that account essentially belong to the conception, nor exclude other applications of it, in which it may be used in a different sense. It was only by the help of such a method that the Pythagoreans could apply the theory of numbers to concrete phenomena. It is possible that *in certain cases* the One, the Unlimited, Number, &c., may have been regarded as corporeal. But we cannot conclude from this that they were *universally* conceived as such. We must remember that numerical determinations are very variously employed by the Pythagoreans, and that the

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[1] *Pyth. Phil.* 93 sqq., 137; *Gesch. der Phil.* i. 403 sq.

[2] *Plat. Phil.* 164 sqq., 288 sq.

[3] *Haller. Allg. Literaturz.* 1845, 895 sq. Similarly, Chaignet ii. 33; 36, 1; 39, 1.

[4] *Beitrag zur Erl. d. Pyth. Metaphysik*, p. 28 sq.

[5] *Gr. Rein. Phil.* 1, 486.

[6] According to Brandis, something similar to breath or fire. According to Reinhold, indeterminate, manifold, unformed matter.

[7] *Gesch. der Phil.* i. 405 sq.

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[1] Arist. *Metaph.* xiii. 6, intermingles his own explanations with the Pythagorean doctrine, as Ritter remarks, *loc. cit.* This appears in the use of such expressions as: *μαθηματικὸς ἀριθμὸς* (opposed to the *ἀρ. νοητὸς*), *ἀριθμὸς οὐ κεχωρισμένος, αἰσθηταὶ οὐσίαι.* This procedure is very usual with him elsewhere.

[2] Vide *supra*, p. 370, 1.

[3] *Metaph.* xiii. 8, 1083 b, 8: *ὁ δὲ τῶν Πυθαγορείων τρόπος τῇ μὲν ἐλάττους ἔχει δυσχερείας τῶν πρότερον εἰρημένων τῇ δὲ ἰδίας ἑτέρας· τὸ μὲν γὰρ μὴ χωριστὸν ποιεῖν τὸν ἀριθμὸν ἀφαιρεῖται πολλὰ τῶν ἀδυνάτων· τὸ δὲ τὰ σώματα ἐξ ἀριθμῶν εἶναι συγκείμενα καὶ τὸν ἀριθμὸν τοῦτον εἶναι μαθηματικὸν ἀδύνατόν ἐστιν.* *De Cælo*, iii. 1, end: the Pythagorean doctrine, according to which all is number, is as illogical as the Platonic construction of the elementary bodies: *τὰ μὲν γὰρ φυσικὰ σώματα φαίνεται βάρος ἔχοντα καὶ κουφότητα, τὰς δὲ μονάδας οὔτε σῶμα ποιεῖν οἷόν τε συντιθεμένας οὔτε βάρος ἔχειν.* *Metaph.* i. 8, 990 a, 12, even supposing that magnitudes could result from the Limited and the Unlimited, *τίνα τρόπον ἔσται τὰ μὲν κοῦφα τὰ δὲ βάρος ἔχοντα τῶν σωμάτων*; *ibid.* xiv. 3 (vide *supra*, p. 370, 1), where also the Pythagoreans are reckoned among those who only admitted mathematical number.

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[1] Vide *infra*, § iv.

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[1] Vide *supra*, p. 400, 1, and p. 407, 2.

[2] Arist. *Phys.* iv. 6, 213 b, 22. Cf. iii. 4, 203 a, 6; Stobæus, *Ecl.* i. 380; Plut. *Plac.* ii. 9, 1. Further details, infr. *Cosmology*.

unlimited and the limited are of different kinds,[1] which are not clearly distinguished because the language of Philosophy was as yet too unformed, and thought too unpractised in logical deduction and the analysis of concepts.

For similar reasons I must contest Ritter's theory. That the Pythagoreans derived bodies from geometrical figures is true, and will be shown later on; it is also true that they reduced figures and space-dimensions to numbers, the point to Unity, the line to Duality, and so on, and that they reckoned infinite space, intermediate space, and the void under the head of the Unlimited.[2] But it does not follow from this that by Unity they understood nothing but the point, by the Unlimited nothing but empty space; here again all that we have just said as to the application of their principles to phenomena holds good. They themselves designate by the name of the Unity not the point merely, but the soul; by that of Duality, not the line merely, but opinion; they make time as well as empty space enter the world from the Unlimited. It is evident that the conceptions of the Limit, the Unlimited, Unity, Number, have a wider compass than those of the point, the void and figures; figures, at any rate, are expressly distinguished from the numbers by which they are defined;[1] and the void is spoken of in a manner that, strictly interpreted, must apply to the Limiting, and not to the Unlimited.[2] Not much stress, however, can be laid upon the last-mentioned circumstance, because the Pythagoreans seem to have here involved themselves in a contradiction with their other theories.

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[1] Ritter says (i. 414) that the Indeterminate as such can have no species; but in the first place this expression is in itself incorrect; for the unlimited in space, the unlimited in time, qualitative unlimitedness, &c.. are so many kinds of the Unlimited. And in the second place it could not possibly be said of the Pythagorean system.

[2] Cf. p. 414, 2, and Arist. *De Cœlo*, ii. 13, 293 a, 30, where it is spoken of as an opinion of the Pythagoreans that the limit is more noble (τιμιώτερον) than that which lies between. From this we may conclude that the μεταξὺ is closely related to the Unlimited.

But the most decisive argument against the interpretations we have been enumerating is derived from the consideration of the Pythagorean system as a whole; for its arithmetical character can only be understood if we suppose that the conception of number formed its point of departure. Had it started from the consideration of unlimited matter, and of particles of matter, a system of mechanical physics, similar to the Atomistic system must have been the result. Nothing of this kind is to be found in pure Pythagoreanism. The number-theory, on the other hand, the most essential and specific part of the system, could never in that case have arisen: the proportions of bodies might perhaps have been defined according to numbers, but there would have been no possible reason for regarding numbers as the substance of things. This, the fundamental conception of the whole system, can only be accounted for, if the system be dominated by the idea of numerical relations, if its original tendency were to regard bodies as numbers, and not numbers as bodies. We are expressly told that Ecphantus, a later philosopher, who scarcely can be numbered among the Pythagoreans at all, was the first to explain the Pythagorean Monads as something corporeal.[1] The ancient Pythagoreans cannot have held such an opinion, for in that case they must have believed the corporeal to have been something original, instead of deriving it, as we have just shown that they did, out of mathematical figures.[2] Nor can they have originally meant by the Unlimited infinite matter. The Unlimited must have acquired this import indirectly in its application to the cosmos; otherwise it is incomprehensible how they came to explain the Unlimited as the Even. The same considerations hold good as against the theory of Ritter. Since geometrical figures were derived from numbers, the elements of figure—that is to say the point and the interspace—must be posterior to the elements of number, and so they were unquestionably regarded by the Pythagoreans. For the odd and the even cannot be derived from the point and the interspace, whereas it is quite conceivable from the Pythagorean point of view that the odd and the even should first have been discriminated as elements of number, that the more general antithesis of the Limiting and the Unlimited should thence have been attained, and in the application of this to space relations, that the point should have been regarded as the first limit of space, and empty space as the unlimited. Had the Pythagorean philosophy taken the opposite course, and proceeded from space dimensions and figures to numbers, the geometrical element in it must have predominated over the arithmetical; figure, instead of number, must have been declared to be the essence of things; and the system of geometrical figures must have taken the place of the decuple numerical system. Even harmony could no longer have had the great significance that it possessed for the Pythagoreans,

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[1] Arist. *Metaph.* vii. 11, 1036 b, 12: *ἀνάγουσι πάντα εἰς τοὺς ἀριθμοὺς καὶ γραμμῆς τὸν λόγον τὸν τῶν δύο εἶναι φασιν.* Cf. xiv. 5, 1092 b, 10: *ὡς Εὔρυτος ἔταττε, τίς ἀριθμὸς τίνος, οἷον ὁδὶ μὲν ἀνθρώπου, ὁδὶ δὲ ἵππου.* Plato spoke in a similar manner of a number of the plane and of the solid, but he did not therefore regard numbers as extended or corporeal (Arist. *De An.* i. 2, 404 b, 21; cf. Part ii. a, 636, 4; 807, 2, third edition). In *Metaph.* xiii. 9, 1085 a, 7 figures, from the point of view of Platonists who favoured Pythagoreanism, are expressly called *τὰ ὕστερον γένη τοῦ ἀριθμοῦ*, the class which comes after number (the genitive *ἀριθμοῦ* is governed by *ὕστερον*, not by *γένη*; cf. *Metaph.* i. 9, 992 b, 13).

[2] The void is considered as separating all things from each other. Arist. *Phys.* iv. 6, 213 b, 22: *εἶναι δ' ἔφασαν καὶ οἱ Πυθαγόρειοι κενὸν, καὶ ἐπεισιέναι αὐτὸ τῷ οὐρανῷ ἐκ τοῦ ἀπείρου πνεύματος* (which Chaignet [ii. 70, 157], as it seems to me unnecessarily, would have omitted or changed into *πνεῦμα*. Tennemann [*Gesch. d. Phil.* i. 110] also prefers *πνεῦμα*) *ὡς ἀναπνέοντι καὶ τὸ κενὸν, ὃ διορίζει τὰς φύσεις . . . καὶ τοῦτ' εἶναι πρῶτον ἐν τοῖς ἀριθμοῖς· τὸ γὰρ κενὸν διορίζειν τὴν φύσιν αὐτῶν* (which Philop. *De Gen. An.* 51 a, develops no doubt merely according to his own fancy). Similarly Stobæus, i. 380. Now the separating principle as such is also the limiting principle; for the assertion of Brandis that the difference of numbers is derived from the Unlimited, and their determination from Unity, is untenable. What constitutes the distinction of one thing from another, except its determination in regard to that other thing? If then we hold to the proposition that the void is the principle of separation, it must itself be placed on the side of the limiting, and consequently that which is separated by the void must be placed on the opposite side. We must, with Ritter, i. 418 sq., consider the One as a continuous magnitude split up by the void. But this would manifestly be to change each into its contrary.

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[1] Stob. *Ecl.* i. 308: Ἔκφαντος Συρακούσιος εἷς τῶν Πυθαγορείων πάντων [ἀρχὰς] τὰ ἀδιαίρετα σώματα καὶ τὸ κενόν. (Cf. *ibid.* p. 448.) τὰς γὰρ Πυθαγορικὰς μονάδας οὗτος πρῶτος ἀπεφήνατο σωματικάς. For further details on this philosopher, vide § vii. The statement, ap. Plut. *Plac.* i. 11, 3; Stob. i. 336, that Pythagoras regarded the first principles as incorporeal, stands in connection with other statements of a very suspicious character, and cannot, therefore, be made use of here.

[2] This would still be true, even if the conjecture of Brandis (i. 487) were well founded—viz., that besides the attempt already quoted, other attempts were made by the Pythagoreans to explain the deri-

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vation of the thing extended; for the thing extended would remain in this case something derived; but we have no certain evidence on this point, for the passage in Arist. *Metaph.* xiv. 3 (vide p. 400) does not justify this conclusion; cf. Ritter, i. 410 sq.

since the relations of tones were never reduced by them to space relations.

Having thus shown the essentially arithmetical character of the Pythagorean principles, it only remains to enquire how these principles were related to one another, and wherein lay the specific point of departure of the system; whether the Pythagoreans were led from the proposition that all is number to the discrimination of the elements of which numbers and things consist, or conversely from the perception of the primitive opposites to the doctrine that the essence of things lies in number. The exposition of Aristotle tells in favour of the first opinion; for, according to him, the Pythagoreans first concluded from the similarity of things to numbers, that all things were numbers, and afterwards coupled with this proposition the distinction of the opposite elements of which numbers consist.[1] Philolaus, on the contrary, began his work with the doctrine of the Limit and the Unlimited,[2] which might incline us to presuppose that this, or an analogous definition, contained the proper root of the Pythagorean system, and that the Pythagoreans had only reduced all things to number because they thought they perceived in number the first combination of the limited and the unlimited, of unity and multiplicity.[3] This, however, is not necessarily the case; Philolaus, for the sake of logical argument, may very likely have placed that last which, historically, was the beginning of the system. On the other hand, we must certainly consider the exposition of Aristotle as primarily his own view, not as direct evidence establishing a fact. Yet there is every probability that this view is based upon an exact knowledge of the real interconnection of the Pythagorean ideas. It is, indeed, most likely that the starting point of a system so ancient, and so independent of any earlier scientific developments, would have been formed by the simplest and most obvious presentation; that the thought which was less developed therefore, and more directly connected with relations sensibly perceived, the thought that all is number, would have been prior to the reduction of number to its elements; and that the arithmetical distinction of the even and the odd would have preceded the more abstract logical distinction of the unlimited and the limited. If we maintain this latter distinction to have been the fundamental idea from which sprang the further development of the system, it is hard to see why it should immediately have taken an arithmetical turn, instead of a more general and metaphysical direction. The proposition that all is number, and composed of the odd and the even, cannot possibly be derived from the theories concerning the limited and unlimited; but these might very easily and naturally have arisen out of that proposition.[1] The exposition, therefore, of Aristotle, is fully justified. The fundamental conception from which the Pythagorean philosophy starts, is contained in the proposition that all is number; in the next place, the opposite determinations in number—the odd and the even—were distinguished and compared, at first indeed very unmethodically, with other opposites, such as right and left, masculine and feminine, good and evil; the more abstract expression of the limited and unlimited, although at a later time this opposition was placed by Philolaus at the head of the system, and so appears in the decuple table of categories, must belong to a more developed stage of reflection. Thus the principal ideas of this system are developed simply enough from one thought, and that thought is of a kind which might easily occur to the reflecting mind from the observation of the external world, even in the childhood of science.[1]

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[1] Vide *supra*, p. 369, 1; 370, 1.

[2] *Supra*, p. 39, 1.

[3] Cf. Marbach, *Gesch. d. Phil.* i. 108, Ritter, *Pyth. Phil.* 134 sq., and generally all those who consider the opposition of Unity and Duality, or of Unity and Multiplicity, as the principle of the Pythagorean doctrine—e.g. Braniss, *Gesch. der Phil. s. Kant*, i. 110 sq., 114 sq., &c.

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[1] Cf. *supra*, p. 376 sq.

IV. *THE PYTHAGOREAN PHILOSOPHY* (*continued*).

SYSTEMATIC DEVELOPMENT OF THE NUMBER-THEORY, AND ITS APPLICATION TO PHYSICS.

In the further development and application of their number-theory, the procedure of the Pythagoreans was for the most part unmethodical and arbitrary. They sought in things, says Aristotle,[2] a similarity with numbers and numerical relations; and the category of numbers which in this manner they obtained as an object, they regarded as the essence of that object. If, however, in any case reality did not entirely agree with the presupposed arithmetical scheme, they resorted to hypotheses like that of the counter-earth to procure agreement. Thus they said that justice consisted of the equal multiplied by the equal, or in the square number, because it returns equal for equal; and they therefore identified justice[1] with four, as the first square number, or nine, as the first unequal square number. So seven was the critical time, because in the opinion of the ancients, the climacteric years were determined by it; five, as the union of the first masculine with the first feminine number, was called marriage; one was reason, because it is unchangeable; two, opinion, because it is variable and indeterminate.[2] By further combinations of such

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[1] After the remarks on p. 312, 1; 343, 4, I think it is unnecessary to append a criticism of the exposition of the theory of numbers and of the Pythagorean theology given by Röth (ii. a, 632 sq., 868 sq.). It is impossible to enter on a discussion of the primitive form of the Pythagorean doctrine with an author who seeks true Pythagoreanism in the Orphic fragments, and sees in the texts of Aristotle and Philolaus only spurious Pythagoreanism. Such a discussion becomes absolutely out of the question when the historian intermingles in an entirely arbitrary manner his own ideas with the sources he adopts.

[2] *Metaph.* i. 5 (cf. p. 369, 1): *καὶ ὅσα εἶχον ὁμολογούμενα δεικνύναι ἔν τε τοῖς ἀριθμοῖς καὶ ταῖς ἁρμονίαις πρὸς τὰ τοῦ οὐρανοῦ πάθη καὶ*

μέρη καὶ πρὸς τὴν ὅλην διακόσμησιν, ταῦτα συνάγοντες ἐφήρμοττον. κἂν εἴ τί που διέλειπε προσεγλίχοντο τοῦ συνειρομένην πᾶσαν αὐτοῖς εἶναι τὴν πραγματείαν, which is immediately proved by the example of the counter-earth.

[1] They also denominated justice the *ἀντιπεπονθὸς*, Arist. *Eth. Nic.* v. 8, sub init.; *M. Mor.* i: 34, 1194 a, 28; Alex. *in Met.* vide next note. Here, however, not the inverse ratio in the mathematical sense, but simply remuneration, seems to be intended: for there results from the judge doing to the offender what the offender has done to the offended, not an inverse, but a direct ratio A : B = B : C. But it is possible that the expression *ἀντιπεπονθὸς* led the Pythagoreans in the sequel to make the definition of justice also from the inverse proportion. The same thought of remuneration is expressed in the complicated, and evidently later, definition ap. Iambl. *Theol. Arithm.* p. 29 sq.

[2] Arist. *Metaph.* i. 5; vide p. 369; *ibid.* xiii. 4, 1078 b, 21: *οἱ δὲ Πυθαγόρειοι πρότερον περί τινων ὀλίγων (ἐζήτουν καθόλου ὁρίζεσθαι), ὧν τοὺς λόγους εἰς τοὺς ἀριθμοὺς ἀνῆπτον. οἷον τί ἐστι καιρὸς ἢ τὸ δίκαιον ἢ γάμος.* Similarly, *ibid.* xiv. 6, 1093 a, 13 sq., where the Pythagoreans are not named, but where they are certainly alluded to. *M. Mor.* i. 1, 1182 a, 11, where the definition of justice as *ἀριθμὸς ἰσάκις ἴσος* is attributed to Pythagoras. Alex-

analogies, there resulted theorems like these: that this or that conception had its seat in this or that part of the world; opinion, for example, in the region of the earth; the proper time in that of the sun, because they are both denoted by the same number.[1] In a

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ander, *in Metaph.* i. 5, 985 b, 26, p. 28, 23 Bon.: *τίνα δὲ τὰ ὁμοιώματα ἐν τοῖς ἀριθμοῖς ἔλεγον εἶναι πρὸς τὰ ὄντα τε καὶ γινόμενα, ἐδήλωσε. τῆς μὲν γὰρ δικαιοσύνης ἴδιον ὑπολαμβάνοντες εἶναι τὸ ἀντιπεπονθός τε καὶ ἴσον, ἐν τοῖς ἀριθμοῖς τοῦτο εὑρίσκοντες ὂν, διὰ τοῦτο καὶ τὸν ἰσάκις ἴσον ἀριθμὸν πρῶτον ἔλεγον εἶναι δικαιοσύνην . . τοῦτον δὲ οἱ μὲν τὸν τέσσαρα ἔλεγον* (so also Iambl. *Th. Ar.* p. 24, from a more complicated reason). . *οἱ δὲ τὸν ἐννέα, ὅς ἐστι πρῶτος τετράγωνος.* (This is a 'reading of Bonitz,' instead of *στερεὸς*, as given by the manuscripts.) *ἀπὸ περιττοῦ τοῦ τρία ἐφ' αὐτὸν γενομένου* (cf. Iambl. p. 29) *καιρὸν δὲ πάλιν ἔλεγον τὸν ἑπτά· δοκεῖ γὰρ τὰ φυσικὰ τοὺς τελείους καιροὺς ἴσχειν καὶ γενέσεως καὶ τελειώσεως κατὰ ἑβδομάδας, ὡς ἐπ' ἀνθρώπου. καὶ γὰρ τίκτεται ἑπταμηνιαῖα, καὶ ὀδοντοφυεῖ τοσουτῶν ἐτῶν, καὶ ἡβάσκει περὶ τὴν δευτέραν ἑβδομάδα, καὶ γενειᾷ περὶ τὴν τρίτην· καὶ τὸν ἥλιον δὲ, ἐπεὶ αὐτὸς αἴτιος εἶναι τῶν καρπῶν, φησὶ, δοκεῖ, ἐνταῦθά φασιν ἱδρῦσθαι καθ' ὃ ὁ ἕβδομος ἀριθμός ἐστιν* (in the seventh place of the periphery of the world) *ὃν καιρὸν λέγουσιν . . . ἐπεὶ δὲ οὔτε γεννᾷ τινὰ τῶν ἐν τῇ δεκάδι ἀριθμῶν ὁ ἑπτὰ οὔτε γεννᾶται ὑπό τινος αὐτῶν, διὰ τοῦτο καὶ Ἀθηνᾶν ἔλεγον αὐτὸν* (cf. *Th. Ar.* p. 42, 54, &c.) . . . *γάμον δὲ ἔλεγον τὸν πέντε, ὅτι ὁ μὲν γάμος σύνοδος ἄῤῥενός ἐστι καὶ θήλεος, ἔτι δὲ κατ' αὐτοὺς ἄῤῥεν μὲν τὸ περιττὸν θῆλυ δὲ τὸ ἄρτιον, πρῶτος δὲ οὗτος ἐξ ἀρτίου τοῦ δύο πρώτου καὶ πρώτου τοῦ τρία περιττοῦ τὴν γένεσιν ἔχει . . νοῦν δὲ καὶ οὐσίαν ἔλεγον τὸ ἕν· τὴν γὰρ ψυχὴν ὡς τὸν νοῦν εἶπε* (Arist. l. c.). *διὰ τὸ μόνιμον δὲ καὶ τὸ ὅμοιον πάντῃ καὶ τὸ ἀρχικὸν τὸν νοῦν μονάδα τε καὶ ἓν ἔλεγον* (similarly, *Th. Ar.* p. 8, where further details will be found. Philolaus, however [vide *infra*], assigned Reason to the number seven) *ἀλλὰ καὶ οὐσίαν, ὅτι πρῶτον ἡ οὐσία. δόξαν δὲ τὰ δύο διὰ τὸ ἐπ' ἄμφω μεταβλητὴν εἶναι· ἔλεγον δὲ καὶ κίνησιν αὐτὴν καὶ ἐπίθεσιν* (?). But here, already, especially in the reasons adduced for the support of the various designations, many recent elements seem to be intermingled. This is still more largely the case in regard to the other commentators of the passage in Aristotle (*Schol. in Arist.* p. 540 b sqq.) and such writers as Moderatus ap. Porph. *Vit. Pythag.* 49 sqq.; Stob. i. 18; Nicomachus *ap. Phot. Cod.* 187; Jambl. *Theol. Arithm.* 8 sq.; Theo, *Math.* c. 3, 40 sqq.; Plut. *De Is.* c. 10, 42, 75, p. 354, 367, 381; Porph. *De Abstin.* ii. 36 &c. I therefore abstain from making further citations from these authors, for although in what they quote there may be many things really belonging to the ancient Pythagoreans, yet we can never be certain on this point. In general, the text that we have quoted above, from Aristotle, *Met.* xiii. 4, should make us mistrustful of these statements.

[1] Cf. on this point what is said

similar manner, certain numbers,[1] or certain figures and

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further on, of the relation of the terrestrial region to Olympus, and Arist. *Metaph.* i. 8, 990 a, 18. How is it possible to explain the celestial phenomena on the Pythagorean hypotheses? ὅταν γὰρ ἐν τῳδὶ μὲν τῷ μέρει δόξα καὶ καιρὸς αὐτοῖς ᾖ, μικρὸν δὲ ἄνωθεν ἢ κάτωθεν ἀδικία (al. ἀνικία, according to Iambl. *Theol. Arithm.* p. 28, we might conjecture ἀνεικία, but Alex. thinks ἀνικία more probable, cf. p. 429, 6), καὶ κρίσις ἢ μῖξις, ἀπόδειξιν δὲ λέγωσιν, ὅτι τούτων μὲν ἓν ἕκαστον ἀριθμός ἐστι, συμβαίνει δὲ κατὰ τὸν τόπον τοῦτον ἤδη πλῆθος εἶναι τῶν συνισταμένων μεγεθῶν διὰ τὸ τὰ πάθη ταῦτα ἀκολουθεῖν τοῖς τόποις ἑκάστοις, πότερον οὗτος ὁ αὐτός ἐστιν ἀριθμὸς ὁ ἐν τῷ οὐρανῷ, ὃν δεῖ λαβεῖν ὅτι τούτων ἕκαστόν ἐστιν, ἢ παρὰ τοῦτον ἄλλος. This passage has never been fully explained, either by recent commentators, or by Christ, *Stud. in Arist. libr. metaph. coll.* (Berlin, 1853), p. 23 sq. The best expedient seems to be to substitute for διὰ τὸ 'διὸ' (as, perhaps, was done by Alexander), and to insert 'τοῦτο' before ἤδη (I formerly conjectured τοδὶ, instead of ἤδη, but Alexander is in favour of ἤδη). The meaning becomes then: 'If the Pythagoreans place in certain determinate parts of the heavens opinion, the proper time, &c., and in support of this doctrine assert that each of these concepts is a determinate number (opinion, for example, is the number two), and that furthermore, this or that portion of the universe comprehends in itself precisely that number of celestial bodies (the terrestrial region, for example, is the place of two, because the earth occupies the second place in the series of celestial bodies), and that consequently these concepts belong to these regions (opinion to the earth, and the proper time [vide preceding note] to the sun): does it follow from all this that the corresponding spheres of the universe are or are not identical with these concepts?'

[1] Joh. Lydus, *De mens.* iv. 44, p. 208, Röth, Φιλόλαος τὴν δυάδα Κρόνου σύνευνον (Rhea, the Earth, vide the following note) εἶναι λέγει (because the Earth is the second celestial body counting from the centre). Moderatus ap. Stob. i. 20: Πυθαγόρας . . . τοῖς θεοῖς ἀπεικάζων ἐπωνόμαζεν [τοὺς ἀριθμούς], ὡς Ἀπόλλωνα μὲν τὴν μόναδα οὖσαν (according to the etymology which he assigns to the name of the god, α privative and πολύς, and which is very common among later writers, cf. vol. iii. a, 306, 6, 2nd ed.) Ἄρτεμιν δὲ τὴν δυάδα (perhaps because of the resemblance of Ἄρτεμις and ἄρτιος) τὴν δὲ ἑξάδα γάμον καὶ Ἀφροδίτην, τὴν δὲ ἑβδομάδα καιρὸν καὶ Ἀθηνᾶν. Ἀσφάλιον δὲ Ποσειδῶνα τὴν ὀγδοάδα (the number of the cube; the cube [vide *infra*] is the form of the Earth, and Poseidon is the γαιήοχος), καὶ τὴν δεκάδα Παντέλειαν. The *Theol. Arithm.* give many names of this sort for numbers. The assertions of Moderatus in respect of the numbers one, two, seven, and eight, are confirmed by Plutarch *De Is.* c. 10, p. 354; in part also by Alexander (vide the note before the last). Alexander says in the same place, c. 75 (cf. *Theol. Arith.* p. 9), that the Dyad was also called Eris and τόλμη. On the other hand, Philo, *De Mundi Opif.* 22 E, affirms that the other philosophers compare the

their angles,[1] were assigned to particular gods; here

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number seven to Athene, but that the Pythagoreans compare it to the Supreme God, which they do for the same reason, because it neither begets nor was begotten. This last interpretation is manifestly of later origin. As to the general fact, that numbers were designated by the names of the gods, there seems no doubt.

[1] Plut. *De Is.* c. 75: *οἱ δὲ Πυθαγόρειοι καὶ ἀριθμοὺς καὶ σχήματα θεῶν ἐκόσμησαν προσηγορίαις. τὸ μὲν γὰρ ἰσόπλευρον τρίγωνον ἐκάλουν Ἀθηνᾶν κορυφαγενῆ καὶ Τριτογένειαν, ὅτι τρισὶ καθέτοις ἀπὸ τῶν τριῶν γωνιῶν ἀγομέναις διαιρεῖται.* *Ibid.* c. 30: *λέγουσι γὰρ (οἱ Πυθ.), ἐν ἀρτίῳ μέτρῳ ἕκτῳ καὶ πεντηκοστῷ γεγονέναι Τυφῶνα· καὶ πάλιν, τὴν μὲν τοῦ τριγώνου* (sc. *γωνίαν*) *ᾍδου καὶ Διονύσου καὶ Ἄρεος εἶναι· τὴν δὲ τοῦ τετραγώνου Ῥέας καὶ Ἀφροδίτης καὶ Δήμητρος καὶ Ἑστίας καὶ Ἥρας· τὴν δὲ τοῦ δωδεκαγόνου Διός· τὴν δὲ ἑκκαιπεντηκονταγωνίου Τυφῶνος, ὡς Εὔδοξος ἱστόρηκεν.* Procl. *in Eucl.* i. p. 36 (130 Fr.): *καὶ γὰρ παρὰ τοῖς Πυθαγορείοις εὑρήσομεν ἄλλας γωνίας ἄλλοις θεοῖς ἀνακειμένας, ὥσπερ καὶ ὁ Φιλόλαος πεποίηκε τοῖς μὲν τὴν τριγωνικὴν γωνίαν τοῖς δὲ τὴν τετραγωνικὴν ἀφιερώσας, καὶ ἄλλας ἄλλοις καὶ τὴν αὐτὴν πλείοσι θεοῖς.* *Ibid.* p. 46 (166 f. Fr.): *εἰκότως ἄρα ὁ Φιλόλαος τὴν τοῦ τριγώνου γωνίαν τέτταρσιν ἀνέθηκε θεοῖς, Κρόνῳ καὶ ᾍδῃ καὶ Ἄρει καὶ Διονύσῳ.* *Ibid.* p. 48 (173 Fr.): *δοκεῖ δὲ τοῖς Πυθαγορείοις τοῦτο [τὸ τετράγωνον] διαφερόντως τῶν τετραπλεύρων εἰκόνα φέρειν θείας οὐσίας . . . καὶ πρὸς τούτοις ὁ Φιλόλαος . . . τὴν τοῦ τετραγώνου γωνίαν Ῥέας καὶ Δήμητρος καὶ Ἑστίας ἀποκαλεῖ.* *Ibid.* p. 174 Fr.: *τὴν μὲν τριγωνικὴν γωνίαν ὁ Φιλόλαος τέτταρσιν ἀνῆκεν [ἀνέθηκε] θεοῖς τὴν δὲ τετραγωνικὴν τρισίν.* *Ibid.*: *τὴν γὰρ τοῦ δυωδεκαγόνου γωνίαν Διὸς εἶναί φησιν ὁ Φιλόλαος, ὡς κατὰ μίαν ἕνωσιν τοῦ Διὸς ὅλον συνέχοντος τὸν τῆς δυωδεκάδος ἀριθμόν.* As to the reasons for these assertions, tradition tells us nothing. What Proclus says on the subject is evidently based on his own conjectures, springing for the most part from the sphere of Neo-Platonic ideas. It would seem the most probable solution to admit that the angle must have been consecrated to Rhea, Demeter, and Hestia, as goddesses of the earth; because the square is the surface which limits the cube, and the cube, as we shall see, was, according to Philolaus, the primitive form of the earth. But this explanation does not agree with the names of the goddesses, Hera and Aphrodite, mentioned by Plutarch. Was the acute angle of the triangle consecrated in the same sense to Hades, Dionysos, Ares, and Cronos? (Perhaps because the primitive form of fire is the tetrahedron limited by four equilateral triangles, and that in these gods we find the destructive, and also the warming, nature of fire.) This is a question we cannot now discuss. As to the dodecagon, Böckh (*Philol.* 157) has already remarked that it cannot be reduced to the dodecahedron, which Philolaus designates as the primitive form of Æther and of the celestial sphere; for the dodecahedron is limited by regular pentagons. Nevertheless, the agreement of these two witnesses, both much versed in mathematics, leaves no doubt that they really found this fact in the source they were consulting. But this difficulty does

again, only isolated and arbitrary points of comparison are in question. It was unavoidable [1] from the capricious irregularity of this whole procedure, that among all these comparisons there should be numerous contradictions; that the same number or figure should receive various significations,[2] and on the other hand, that the

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not authorise the modifications of the text, and the forced interpretations which Röth, ii. b, 285 sq., advocates on the ground of common sense; they could hardly be based on the Pythagorean mathematics, from which it is by no means self-evident that the angle of the triangle could only have been consecrated to three deities, and the angle of the square to four. (Plutarch and Proclus both have τὴν γωνίαν, and not τὰς γωνίας; and Proclus expressly adds that the same angle could be assigned to many gods; their opinion, therefore, is not that each of the three angles of the triangle, and each of the four angles of the square, had its special divinity.) On the other hand, this difficulty gives us no right to reject the whole statement of the historic Philolaus, and to ascribe it to a Pseudo-Philolaus, author of the fragments (Schaarschmidt, *Schriftst. d. Philol.* 43 sq.). The truth is that we are ignorant of the source of these strange assertions: it does not follow that they may not have had some foundation which Philolaus, from his own point of view, may have thought sufficient. If we once enter the region of imagination, it is difficult to set bounds to arbitrary caprices. Those we have been considering were doubtless not so arbitrary as what Aristotle (vide *infra*, p. 425, 2) quotes from Eurytus. Schaarschmidt is especially perplexed by the attribution of the dodecagon to Zeus, while the fragments of Philolaus regard the decad as the number which rules the universe. This presents to me no greater difficulty than to find in the theory of Philolaus respecting the elements, the dodecahedron made *the* primitive form of Æther, or in the theory of harmony the octave divided into six tones instead of *ten*. The system of number could not be directly applied to geometrical figures. In the same way *that*, among solids, the dodecahedron was attributed to the universal element, so among plane figures, bounded by straight lines, the equilateral dodecagon, easy to construct out of a square by means of equilateral triangles, taking a square as point of departure; easy also to inscribe in a circle—and the angle of which (= 150 degs.) is equal to the angle of the square (90 degs.) and of the equilateral triangle (60 degs.), might have been chosen as the symbol of the universe and of the supreme god who rules the world as a whole (the twelve gods of the myth).

[1] Cf. Arist. *Metaph.* xiv. 6, 1093 a, 1: εἰ δ' ἀνάγκη πάντα ἀριθμοῦ κοινωνεῖν, ἀνάγκη πολλὰ συμβαίνειν τὰ αὐτά. That which is designated by the same number must be similar.

[2] Compare in this respect with

same object or concept should sometimes be denoted by one figure and sometimes by another; what whimsical vagaries were permitted in regard to this subject even in the ancient Pythagorean school, we can see from the example of Eurytus, who attempted to prove the signification of particular numbers by putting together the figures of the things they designated out of the corresponding number of pebbles.[1]

The Pythagoreans, however, did not content themselves with this arbitrary application of their principles, but sought to carry them out methodically by more precisely defining the numerical proportions according to which all things are ordered, and applying them to the different classes of the Real. We cannot indeed assert that the whole school entered on these discussions, and observed in their procedure the same plan; even with regard to the work of Philolaus, which alone

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what results from the preceding notes, the statements that justice is designated by the number five (Iambl. *Theol. Arith.* p. 30, 33) or three (Plut. *Is.* 75); health by the number seven (Philolaus, ap. Iambl. *Th. Ar.* p. 56) or six (*ibid.* p. 38); marriage by the numbers five, six, or three (Theol. *Arithm.* p. 18, 34); the sun by the decad (*Th. Ar.* p. 60); light by the number seven (Philolaus, *loc. cit.*) and by the number five (*Theol. Ar.* 28); the spirit by the monad, the soul by the dyad, opinion (δόξα) by the triad, the body or sensation by the tetrad (Theo of Smyrna, c. 38, p. 152; Asclep. *loc. cit.* 541 a, 17, cf. p. 420, 2). It is true that the last-mentioned passage is certainly posterior to Plato; and that, as regards the rest, it is impossible to say what really belonged to the ancient Pythagoreans.

[1] According to Aristotle, *Metaph.* xiv. 5, 1092 b, 10 (where the words, τῶν φυτῶν, l. 13, seem moreover to involve a fault certainly very ancient), and Theophr. *Metaph.* p. 312 Br. (Fr. 12, 11); vide the excellent commentary of Alexander (in this case, the real Alexander) *ad. Met.* p. 805, Bon.; cf. also Syrian *in Metaph. Schol.* 938 a, 27. I cannot understand how Chaignet, ii. 125, can deny to me the opinion that the ancient Pythagorean school '*avait au moins semé le germe d'où est sortie toute cette symbolique de fantaisie,*' in spite of the preceding demonstrations, cited by himself (p. 126).

could give us any clue on this subject, our knowledge is too scanty to allow of our determining with certainty the position which particular enquiries assumed in it. We shall, however, be adhering pretty closely to the natural connection of these enquiries if we first consider the number-system as such; next its application to tones and figures; thirdly, the doctrine of the elementary bodies and notions about the universe; and finally, the theories on the terrestrial natures and man. It would be easy to reduce these divisions to more general points of view, but this I think ought not to be done, since we know nothing of any division of the Pythagorean system of philosophy corresponding with the later discrimination of three principal parts, or any other classification of the kind.

In order to reduce numbers themselves to a fixed schema, the Pythagoreans employed the division of odd and even, and also the system of decads. The former has been already alluded to (p. 377); in its further development various species were discriminated from the even as well as from the odd; whether these species were the same as are enumerated by later writers[1] is not quite certain, nor can we be sure how many of the other divisions[1] of numbers which we find in more recent authors[2] belong to the ancient Pythagorean doctrine. Many of these ideas, no doubt, really belonged to the Pythagoreans.[3] But all these arithmetical principles, if we except the general distinction of odd and even, were far less important in regard to the Pythagorean cosmology than to Greek arithmetic, which here also followed the direction given to it by this school. The importance of the decuple system in relation to the Pythagoreans is much greater. For as they considered numbers over ten to be only the repetition of the first ten numbers,[4] all numbers and all powers of numbers appeared to them to be comprehended in the decad, which is therefore called by Philolaus,[5] great, all-powerful and all-producing, the beginning and the guide of the divine and heavenly, as of the terrestrial life. According to Aristotle,[6] it is the

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[1] Nicom. *Inst. Arithm.* p. 9 sq.: Theo. *Math.* i. c. 8 sq. Three kinds of numbers are here distinguished among the even numbers, the *ἀρτιάκις ἄρτιον* (the numbers that can be divided by even numbers down to Unity, like 64); the *περισσάρτιον* (the numbers which, divided by 2, give even numbers, but which, divided by any even number higher than 2, give uneven numbers like 12 and 20); and the *ἀρτιοπέρισσον* (vide *supra*, p. 377, 1). Similarly three kinds of numbers are distinguished in regard to uneven numbers, the *πρῶτον καὶ ἀσύνθετον* (the first numbers); the *δεύτερον καὶ σύνθετον* (numbers which are the product of several uneven numbers, and are, therefore, not divisible merely by unity, as 9, 15, 21, 25, 27); and lastly, the numbers divisible separately by other numbers than unity, but

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the relation of which to others is only to be defined by unities, as 9 and 25.

[1] On the one hand, Philolaus in the fragment quoted on p. 377, 1, speaks of many kinds of even and odd; on the other, he does not, like more recent writers, give the ἀρτιοπέρισσον as a subdivision of the even, but as a third kind, side by side with the odd and the even.

[2] Such as the distinction of square, oblong, triangular, polygonal, cylindric, spherical, corporeal, and superficial numbers, &c., together with their numerous subdivisions, ἀριθμὸς δύναμις, κύβος, &c. Cf. Nicomachus, Theo, Iamblichus, Boethius, Hippolyt. *Refut.* i. 2, p. 10, &c.

[3] For example, the theory of gnomons (*supra*, p. 378, 1) of square and cubic numbers, ἀριθμοὶ, τετράγωνοι and ἑτερομήκεις, of diagonal numbers (Plato, *Rep.* viii. 546 B sq.; cf. p. 429, 6).

[4] Hierocl. *in Carm. Aur.* p. 166 (*Fragm. Phil.* i. 464): τοῦ δὲ ἀριθμοῦ τὸ πεπερασμένον διάστημα ἡ δεκάς. ὁ γὰρ ἐπὶ πλέον ἀριθμεῖν ἐθέλων ἀνακάμπτει πάλιν ἐπὶ τὸ ἕν. It is for this reason that Aristotle blames Plato, and indirectly also the Pythagoreans, for only counting numbers up to ten. *Phys.* iii. 6, 206 b, 30; *Metaph.* xii. 8, 1073 a, 19; xiii. 8, 1084 a, 12: εἰ μέχρι δεκάδος ὁ ἀριθμὸς, ὥσπερ τινές φασιν.

[5] Vide *supra*, p. 371 2.

[6] *Metaph.* i. 5, 986 a, 8: ἐπειδὴ

perfect and complete, which includes in itself[1] the whole essence of number; and as nothing, generally speaking, would be knowable without number, so in particular, we are indebted solely to the decad that knowledge is possible to us.[2] Four has a similar importance, not merely because it is the first square number, but chiefly because the four first numbers added together produce the perfect number, ten. In the famous Pythagorean oath, Pythagoras is therefore celebrated as the revealer of the quaternary number (Tetractys), and this in its turn is praised as the source and root of the eternal nature.[3] Later Pythagoreans are fond of arranging all

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τέλειον ἡ δεκὰς εἶναι δοκεῖ καὶ πᾶσαν περιειληφέναι τὴν τῶν ἀριθμῶν φύσιν. Philop. *De An.* C, 2, u: *τέλειος γὰρ ἀριθμὸς ὁ δέκα, περιέχει γὰρ πάντα ἀριθμὸν ἐν ἑαυτῷ.* Whether this is taken from Aristotle's treatise on the good, as Brandis, i. 473, conjectures, is uncertain.

[1] Hence the decuple classifications, in cases where the totality of the Real is in question; as in the table of opposites and the system of the heavenly bodies.

[2] Philol. *loc. cit.*; and doubtless in regard to this passage, Iambl. *Theol. Ar.* p. 61: *πίστις γε μὴν καλεῖται, ὅτι κατὰ τὸν Φιλόλαον δεκάδι καὶ τοῖς αὐτῆς μορίοις περὶ τῶν ὄντων οὐ παρέργως καταλαμβανομένοις πίστιν ἔχομεν.* Cf. what is said in the same place about the work of Speusippus, who shared the opinion of Philolaus. Theo of Smyrna, c. 49, also says that Philolaus spoke at length of the decad, but we know nothing of the treatise attributed to Archytas on this subject, and quoted by Theo.

[3] *Οὐ μὰ τὸν ἁμετέρᾳ γενεᾷ παραδόντα τετρακτὺν, παγὰν ἀενάου φύσιος ῥιζώματ'* (or: *ῥίζωμά τ'*) *ἔχουσαν.* On this oath and the quaternary number vide *Carm. Aur.* v. 47 sq.; Hierocles *in Carm. Aur.* v. 166 f. (*Fragm. Phil.* i. 464 sq.); Theo, *Math.* c. 38; Lucian, *De Salut.* c. 5; *V. Auct.* 4; Sext. Math. 94 sqq.; iv. 2; Plut. *Plac.* i. 3, 16; Iambl. *Th. Ar.* p. 20; cf. Ast on the passage and Müllach in *loc. cit.* of the golden poem. The date of these verses cannot be determined with certainty. According to the *Theol. Ar.*, they were found in Empedocles, and from his point of view the four elements should be regarded as the four roots of the universe. But in this case, instead of *γενεᾷ*, it would be necessary to read with Sextus, iv. 2, and others, *ψυχᾷ* (cf. Fabricius in *loc. cit.* of Fabricius), and by the word, *παραδοὺς* to understand (with Mosheim, *in Cudworth. Syst. Intell.* i. 580) the Deity. It seems to me more likely that Pythagoras is here celebrated as the inventor of the Tetractys. It is, perhaps, on account of these

things in series of four:[1] how far this is derived from the ancient Pythagoreans cannot be determined. But each of the other numbers has its particular value. One is the first from which all the other numbers arise, and in which the opposite qualities of numbers, the odd and the even, must therefore be united;[2] two is the first even number; three the first that is uneven and perfect, because in it we first find beginning, middle and end;[3] five is the first number which results by addition from the first even and the first uneven number.[4] Six is the first number which results from them by multiplication. Six multiplied by itself gives a number which again ends in six; all the multiples of five end either in five or ten;[5] three, four, and five, are the numbers of the most perfect right-angled triangle, which together form a particular proportion;[6]

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verses that Xenocrates calls his second principle *τὸ ἀένναον* (cf. Part. ii. a, 866, 1, third edition).

[1] e.g. Theo and *Theol. Arithm.* l. c.

[2] Vide *supra*, p. 401, and respecting the *ἀρτιοπέρισσον*, Theo, p. 30: *Ἀριστοτέλης δὲ ἐν τῷ πυθαγορικῷ τὸ ἓν φησιν ἀμφοτέρων μετέχειν τῆς φύσεως· ἀρτίῳ μὲν γὰρ προστεθὲν περιττὸν ποιεῖ, περιττῷ δὲ ἄρτιον, ὃ οὐκ ἂν ἠδύνατο, εἰ μὴ ἀμφοῖν ταῖν φύσεοιν μετεῖχε*, a proof which is as singular as the proposition it is intended to demonstrate *συμφέρεται δὲ τούτοις καὶ Ἀρχύτας*. Plutarch gives the same reason. Plut. De *Ei*. c. 8, p. 388.

[3] Arist. *De Cœlo*, i. 1, 268 a, 10: *καθάπερ γάρ φασι καὶ οἱ Πυθαγόρειοι. τὸ πᾶν καὶ τὰ πάντα τοῖς τρισὶν ὥρισται· τελευτὴ γὰρ καὶ μέσον καὶ ἀρχὴ τὸν ἀριθμὸν ἔχει τὸν τοῦ παντὸς, ταῦτα δὲ τὸν τῆς τριάδος.* Theo, p. 72: *λέγεται δὲ καὶ ὁ τρία τέλειος, ἐπειδὴ πρῶτος ἀρχὴν καὶ μέσα καὶ πέρας ἔχει.* Iambl. *Theol. Arithm.* p. 15, gives an improbable and confused reason, *μεσότητα καὶ ἀναλογίαν αὐτὴν προσηγόρευον.*

[4] Vide *supra*, p. 420, 1; 422, 1; Anatol. ap. Iambl. *Th. Ar.* p. 34 (besides many other properties of the number 6): *ἐξ ἀρτίου καὶ περισσοῦ τῶν πρώτων, ἄῤῥενος καὶ θήλεος, δυνάμει καὶ πολλαπλασιασμῷ γίνεται*, hence it is called *ἀῤῥενόθηλυς* and *γάμος*. These denominations are also found *loc. cit.* p. 18; Plut. *De Ei.* c. 8; Theo, *Mus.* c. 6; Clemens. *Strom.* vi. 683 C; Philop. *Phys.* K, 11.

[5] Plut. *De Ei.* c. 8, p. 388.

[6] Iambl. *Theol. Arithm.* p. 26, 43; Procl. *in Eucl.* 111 m (428 Fr.), who attributes to Pythagoras himself the construction of this trian-

seven[1] is the only number within the decad which has neither factor nor product; this number is moreover compounded out of three and four, the significance of which has just been discussed; lastly, to pass over other things, it is together with four the mean arithmetical proportion between one and ten.[2] Eight is the first cube,[3] and the great Tetractys is formed out of the four first uneven and the four first even numbers, the sum of which (36) equals the sum of the cubes of one, two, and three.[4] Nine, as the square of three, and the last of the units, must have had a special importance.[5] With the Pythagoreans themselves, of course, these arithmetical observations were not separated from their other researches on the significance of numbers; and, judging from individual examples, we may suppose that they carried them much farther in a mathematical

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gle, according to an uncertain tradition. Cf. Alex. *in Metaph.* i. 8, 990 a. 23; Philo. *De Vit. Contempl.* 899 B (41). According to this passage the perfect right-angled triangle is that of which the sides = 3 and 4, and of which consequently the hypothenuse = 5. This last is called δυναμένη, because its square is equal to the sum of the squares of the sides. The sides are called δυαστευόμεναι; the hypothenuse is also called ἀνικία (ap. Alex.); this denomination is probably more primitive than the ἀνεικία of the Pseudo-Megillus, ap. Iambl. *Theol. Arithm.* p. 28; this ἀνεικία, like γάμος, indicates the combination of the odd and the even. The expressions we find in Plato, *Rep.* viii. 546 B: αὐξήσεις δυνάμεναί τε καὶ δυναστευόμεναι. This proves these opinions to belong to the ancient Pythagoreans.

[1] Vide *supra*, p. 420, 2, and Iambl. *Theol. Arithm.* p. 43 sq. Because the number 7 has no factors, Philolaus called it ἀμήτωρ, according to Joh. Lydus, *De Mens.* ii. 11, p. 72; cf. also Clemens, *Strom.* vi. 683 D; Chalcid. *in Tim.* 35, p. 188; Mull. sqq.

[2] For 1 + 3 = 4, 4 + 3 = 7, 7 + 3 = 10.

[3] Vide *supra*, 422, 1; Iambl. *Th. Ar.* p. 54; Clemens, *loc. cit.* &c.

[4] Plut. *De Is.* c, 75; Schol. p. 38; ἡ δὲ καλουμένη τετρακτὺς, τὰ ἓξ καὶ τριάκοντα, μέγιστος ἦν ὅρκος, ὡς τεθρύληται· καὶ κόσμος ὠνόμασται, τεσσάρων μὲν ἀρτίων τῶν πρώτων, τεσσάρων δὲ τῶν περισσῶν εἰς τὸ αὐτὸ συντελουμένων ἀποτελούμενος. For further details, cf. *De An. Procr.* 30, 4, p. 1027.

[5] Vide Iambl. *Th. Ar.* p. 57 sq.

direction than could be shown in the present exposition. The later writers, however, give us very little certain information on this subject. Even what I have now taken from them very possibly does not altogether originate with the primitive school, but there is no doubt that it truly describes the character of the ancient Pythagorean theory of numbers.

Number and Harmony being with the Pythagoreans almost equivalent conceptions, their arithmetical system was closely connected with their system of Harmony.[1] The different nature of the two spheres however necessitated for each a separate mode of treatment. While therefore the numbers were arranged according to the number ten, the measure of tones is the octave. The chief divisions of the octave are the fourth and the fifth: the relation of tones in it is measured according to the length of the resonant strings, for the fourth as 3 : 4; for the fifth as 2 : 3; for the whole octave as 1 : 2.[2] Other details, such as the variation of particular tones; the concords that result from them; the

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[1] The Pythagoreans called the harmonic theory *κανονικὴ*, according to Porphyry, *in Ptol. Harm.* (*in Wallisii Opp. Math.* ii.), p. 207, and Ptolemais of Cyrene, who is cited by Porphyry. Notwithstanding, the word, *ἁρμονική*, must also have been in use among them. Aristoxenus (*Harm. Elem.* sub init.; *ibid.* p. 8) gives this as the ordinary designation for the theory of tones (*ἡ καλουμένη ἁρμονικὴ*). In the same way he constantly calls the adherents of the Pythagorean theory *οἱ ἁρμονικοί*, *οἱ καλούμενοι ἁρμονικοὶ*; we find even in Archytas the expression, *ἁρμονικὴ ἀναλογία*, for a certain numerical relation.

[2] This arrangement of the tones in the octave certainly belongs to the ancient Pythagorean school, vide the passage from Philolaus, quoted p. 385, 2. As to the discovery and measure of the octave, however, there is much uncertainty. According to one account, which is found in Nicom. *Harm.* i. 10 sq.; Iambl. *in Nicom.* 171 sq.; *Vit. Pythag.* 115 sq.; Gaudent. *Isag.* 13 sq.; Macrob. *in Somn. Scip.* ii. 1; Censorin, *De Die Nat.* c. 10; Boeth. *De Mus.* i. 10 sq.; it was Pythagoras himself who discovered the harmonic system. He is said to have observed that the sounds of the blacksmith's hammer in the forge produce a fourth, a fifth, and

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an octave. On further examination he discovered that the weight of the hammers was in the same proportion as the acuteness of the tones which they produce. He then, by means of different weights, extended strings of the same thickness and length, and found that the acuteness of the tones was proportionate to the weight. To obtain an harmonic proportion of a fourth between the most elevated string of the heptachord, and that of the fourth (μέση), a fifth between this and the lowest (νήτη), and inversely a fourth between the νήτη and the fifth string from above (παραμέση, or according to the ancient division and the ancient denomination, τρίτη), a fifth between this and the highest string, and a tone between the μέση and the παραμέση (= 8 : 9), a weight is required for the ὑπάτη of 6, for the μέση of 8, for the παραμέση (τρίτη) of 9, for the νήτη of 12. Similarly, say Boethius and Gaudentius, other experiments have shown that in regard to one string equally extended (the monochord canon, the invention of which is attributed to Pythagoras, Diog. viii. 12), that the height of the tones is in inverse proportion to the length of the vibrating string. Boethius gives some further experiments with bells. In this account the story of the smith's hammer is manifestly a story which is at once refuted by the physical impossibility of the fact. It is also singular that the height of the sounds is given as proportional to the tension of the strings, or to the weight which produces this tension, while in reality it is only proportional to the square root of the forces of tension. If then it is true that the Pythagoreans held this opinion, they could not have based it upon experiments; but observing in a general manner that the height of the tones increased with the tension of the strings, they concluded that both increased in the same proportion. It is also possible, however, that this hasty conclusion was drawn by their successors. Lastly, the opinion that Pythagoras himself discovered the arithmetical proportion of tones had been already enunciated, according to Heracleides, ap. Porph. *in Ptol. Harm.* (*in Wallisii Opp. Math.* ii.) c. 3, p. 213, by Xenocrates; and whoever this Heracleides may have been, whether Heracleides Lembus or the grammarian of that name who lived at Rome under Claudius and Nero (Suid. H. c. 1)—Heracleides Ponticus it certainly was not—we have no reason to doubt that Xenocrates really said this of Pythagoras. But the accuracy of the statement is not better proved by the testimony of Xenocrates than by more recent testimony. We cannot say that the thing is impossible, but we may well suspect that here, as in many other instances, a discovery made by the successors of Pythagoras has been attributed to himself. The last assertion is well established. The Pythagoreans must have started from observations on the proportion of the length of strings which, being the same in thickness and tension, produce sounds of different acuteness. We gather this from the testimony of ancient writers, drawn from the Pythagorean sources themselves. In no other way can the indications which we find in Philolaus respecting the fourth, the fifth, and the octave, be explained. It is for this reason different species and musical modes[1] I may leave to the history of musical theories, since these details do not stand in any close connection with the philosophic view of the world adopted by the Pythagoreans.[2]

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that among the ancient musicians the highest number designates the lowest sound; and that in the harmonic series (vide the *Timæus* of Plato) the progression is not from the lower tones to the higher, but from the higher to the lower. The number by which a sound is designated has no relation to the vibrations of the air of which they are compounded, but to the length of the string which creates them. It is only at this point that we can form any exact idea of the discoveries of the Pythagoreans concerning sounds. The Pythagoreans were ignorant of the fact that the height of sounds depends on the number of vibrations of the air. Archytas, for example, in the fragment quoted ap. Porph. *l. c.* p. 236 sq. (Mullach. *Fragm. Phil.* i. 564 b), and in Theo, *Mus.* p. 94, expressly says that sounds become higher in proportion as they move more rapidly; and the same hypothesis is the basis of the doctrine of the spheral harmony, as it is explained by Plato (*Tim.* 67 B), Arist., and much later by Porph. (*in Ptol. Harm.* 217, 235 sq.) and the Platonist Ælianus, quoted by Porphyry (p. 216 sq.), Dionysius the musician (p. 219), and many others. What the Pythagorean theory of sounds established is merely this: that all other conditions being equal, the height of the sounds is in inverse proportion to the length of the vibrating strings, and that the intervals of sound in the octave, determined by this measure, are such as have been given above. Moreover it had not escaped the Pythagoreans that the concord of two sounds is greater in proportion as the integral numbers expressing their proportion are small. Porph. (*in Ptol. Harm.* 280) gives us a Pythagorean explanation from Archytas and Didymus of this principle. The artificial character of this explanation should not make us doubtful as to its antiquity.

[1] The species (γένη) depend on the distribution of strings, the modes (τρόποι, ἁρμονίαι) depend on the pitch of the instruments. There were three kinds—the diatonic, chromatic, and enharmonic; and three modes—the Doric, the Phrygian, and the Lydian. Already, in Plato's time, accessory modes had been added (*Rep.* iii. 398 E sqq.). At a later time they became considerably increased. The distinction of the γένη, at any rate, belongs to the Pythagoreans. Ptol. *Harm.* i. 13 (cf. Porph. *in Ptol.* 310, 313 sq.) speaks of this in regard to Archytas.

[2] Vide besides the passages quoted p. 431, 2; 388, 2; and from Ptol. *Harm.* i. 13 sq., the explanations of Böckh, *Philol.* 65 sqq., and Brandis, *Gr. Röm. Philol.* i. 454 sq., and particularly on the ancient theory of sounds; Böckh, *Stud.* and Daub and Creuzer, iii. 45 sq. (*Klein. Schrift.* iii. 136 sq.); *De Metris Pindari*, p. 203 sqq.; and Martin, *Etudes sur le Timée*, i. 389 sq.; ii. 1 sq.

After tones, the number theory was next applied to geometrical figures, and it is not necessary to be a Pythagorean to see that the form and relations of figures are determined by numbers. If, therefore, the Pythagorean and the Greek mathematicians in general were accustomed to apply geometrical terms to numbers,[1] and to discover arithmetical and harmonical proportions in figures,[2] the habit was perfectly natural. The Pythagoreans, however, did not stop here, but as they saw in numbers generally the essence of things, they sought to derive figures and bodies immediately from definite numbers. Aristotle at any rate tells us that they defined the line as the number two;[1] Philolaus we know explained four as the number of the body;[2] and Plato seems to have called three and four 'the number of the surface,' and 'the number of the solid.'[3] Plato furthermore derived the line from two, the plane from three, and the solid from four;[4] and Alexander ascribes the derivation of solids from planes, planes from lines, and lines from points or monads, alike to Plato and the Pythagoreans.[5] We may, therefore, certainly assume that the Pythagoreans, in regard to the derivation of figures, identified one with the point, two with the line, three with the plane, four with the solid; their reason for this being that the straight line is limited by two points, the first rectilinear figure by three lines, the simplest regular body by four surfaces, whereas the point is an indivisible unity.[1] But by virtue of their general tendencies they must necessarily have believed that this derivation of the figures of bodies involved a similar derivation of the corporeal itself,[2] for, as we have before remarked,[3] they supposed bodies to consist of the lines and planes enclosing them, as they supposed lines and figures to consist of numbers.

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[1] Vide *supra*, p. 427, 2, 3.

[2] We have already found an example of this, p. 426, 6, in the Pythagorean triangle. The demonstration of the harmonic proportion in the cube is somewhat similar. By harmonic proportion (*ἀναλογία ἁρμονική*, called also *ὑπεναντία*) is understood, as distinguished from the arithmetical and geometrical proportion, a proportion between three quantities so that the difference between the middle number and first is to the first as the difference between the middle number and the last is to the last. This is found when the quantities are of such a kind *ὥστε ᾧ ἂν πρᾶτος ὅρος τῶ δευτέρω ὑπερέχῃ ἑαυτῶ μέρει, ταύτῳ ὁ μέσος τῶ τρίτω ὑπερέχει τῶ τρίτω μέρει* (Archyt. ap. Porph. *in Ptol. Harm.* p. 267; *Fragm. Phil.* ii. 119). A similar indication is to be found in Nicom. *Inst. Arithm.* ii. 25, p. 70, in a detailed explanation of the three proportions; Iambl. *in Nicom. Arithm.* p. 141; Plut. *De An. Procr.* 15, p. 1019. We find a less exact notice in Plut. *De Mus.* 22, p. 1138, who sees harmonic proportion in the relation of the numbers 6, 8, 9, 12 a *ἁρμονικὴ μεσότης* is *ἡ ταὐτῷ μήρει τῶν ἄκρων αὐτῶν ὑπερέχουσα καὶ ὑπερεχομένη*, as Plato, *Tim.* 36 A; cf. *Epinom.* 991 A, characterises it. This proportion is called harmonic, because the first numbers between which they exist (3, 4, 6, or 6, 8, 12) express the fundamental proportions of the octave (*ἁρμονία*). For, on the one hand, 8 is greater than 6 by a third of 6, and less than 12 by a third of 12; on the other hand, 6 : 8 is the fourth, 8 : 12 the fifth, 6 : 12 the octave. The same numbers are to be found in the cube, which has 6 surfaces, 8 angles, and 12 terminal lines, and is, therefore, called *γεωμετρικὴ ἁρμονία* by Philolaus according to Nicom. *Inst. Arith.* ii. 26, p. 72 (cf. Cassiodorus, *Exp. in Psalms.* ix. vol. ii. 36 b, Gar. Böckh, *Philol.* 87 sq.); Simpl. *De An.* 18 b; Boëthius, *Arith.* ii. 49 (cf. Philop. *De An.* E 16) also remark that the cube was sometimes called *ἁρμονία* or *harmonia geometrica*.

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[1] *Metaph.* vii. 11, 1036 b, 7. It is often difficult to determine whether the matter of an object should, or should not, be included in its definition; hence ἀποροῦσί τινες ἤδη καὶ ἐπὶ τοῦ κύκλου καὶ τοῦ τριγώνου, ὡς οὐ προσῆκον γραμμαῖς ὁρίζεσθαι καὶ τῷ συνεχεῖ (as if the definition that a triangle contained within three lines did not sufficiently designate the essential nature of the triangle) . . . καὶ ἀνάγουσι πάντα εἰς τοὺς ἀριθμοὺς, καὶ γραμμῆς τὸν λόγον τὸν τῶν δύο εἶναί φασιν. τινὲς, it is certain, means the Pythagoreans; the Platonists are subsequently expressly distinguished from the Pythagoreans.

[2] In a passage which we shall consider further on, Iambl. *Th. Ar.* p. 56: Φιλόλαος δὲ μετὰ τὸ μαθηματικὸν μέγεθος τριχῆ διαστὰν ἐν τετράδι, ποιότητα καὶ χρῶσιν ἐπιδειξαμένης τῆς φύσεως ἐν πεντάδι, ψύχωσιν δὲ ἐν ἑξάδι, νοῦν δὲ καὶ ὑγείαν καὶ τὸ ὑπ' αὐτοῦ λεγόμενον φῶς ἐν ἑβδομάδι, μετὰ ταῦτά φησιν ἔρωτα καὶ φιλίαν καὶ μῆτιν καὶ ἐπίνοιαν ἐν ὀγδοάδι συμβῆναι τοῖς οὖσιν. Asclep. *Schol. in Arist.* p. 541 a, 23: τὸν δὲ τέσσαρα ἀριθμὸν ἔλεγον [οἱ Πυθ.] τὸ σῶμα ἁπλῶς, τὸν δὲ πέντε τὸ φυσικὸν σῶμα, τὸν δὲ ἓξ τὸ ἔμψυχον. It is true that a very improbable reason is given for this, viz., because 6 = 2 × 3, and that the even designates the body, and the uneven the soul.

[3] Arist. quotes (*De An.* i. 2, 404 b, 18), as borrowed from Plato's lectures on philosophy: νοῦν μὲν τὸ ἕν, ἐπιστήμην δὲ τὰ δύο . . . τὸν δὲ τοῦ ἐπιπέδου ἀριθμὸν δόξαν, αἴσθησιν δὲ τὸν τοῦ στερεοῦ.

[4] Arist. *loc. cit.*; *Metaph.* xiv. 3, 1090 b, 20; Ps.-Alex. *in Metaph.* xiii. 9, p. 756, 14 Bon.: τὴν δὲ κατὰ τὸ ἕν, φησιν ἀρχὴν οὐχ ὁμοίως εἰσῆγον ἅπαντες, ἀλλ' οἱ μὲν αὐτοὺς τοὺς ἀριθμοὺς τὰ εἴδη τοῖς μεγέθεσιν ἔλεγον ἐπιφέρειν, οἷον δυάδα μὲν γραμμῇ, τριάδα δὲ ἐπιπέδῳ, τετράδα δὲ στερεῷ. τοιαῦτα γὰρ ἐν τοῖς περὶ Φιλοσοφίας ἱστορεῖ περὶ Πλάτωνος. Cf. Zeller, *Plat. Studien*, 237 sq.; Brandis, *De Perd. Arist. lib.* p. 48 sq.

[5] Vide p. 408, 1.

According to Philolaus, the elementary nature of bodies depends upon their form. Of the five regular bodies, therefore, he assigned the cube to the earth, the tetrahedron to fire, the octohedron to air, the icosahedron to water, the dodecahedron[4] to the fifth element which embraces all the others; that is to say, he held that the smallest constituent parts of these different substances had the supposed form.[1] If we might assume that Plato, who borrowed these definitions from Philolaus, also followed him in the particulars of his construction, we must believe that Philolaus adopted a somewhat complicated procedure[2] in the derivation of the five bodies; but this theory is not only unsupported by any adequate evidence,[3] but even in the exposition of Plato there are considerable arguments against it.[4] Whether this derivation

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[1] It is thus that this doctrine is always explained by the ancients; cf. p. 407, 3; 408, 1; and the passages quoted by Brandis, *l. c.* and *Gr.-röm. Phil.* i. 471; Nikom. *Arithm.* ii. 6; Boëth. *Arithm.* ii. 4, p. 1328; Theo. *Math.* 151 sq.; Iambl. *Th. Ar.* p. 18 sq.; Speusippus, *ibid.* p. 64; Sext. *Pyrrh.* iii. 154; *Math.* iv. 4, vii. 99 (x. 278 sqq.); Joh. Philop. *De An.* C, 2; Diog. viii. 25. No doubt these passages immediately apply to the derivation of geometry, so common after the time of Plato. But it is probable that the Platonic doctrine was the same on this point as the Pythagorean; for the combination in question certainly rests on the standpoint of the theory of numbers.

[2] As is presupposed in the passages quoted. Such a construction of bodies from surfaces is no doubt referred to in the question put by Aristotle to the Pythagoreans (vide p. 400), viz., Whether the first body arose from surfaces or from something else?

[3] Vide p. 407 sq.

[4] Ap. Stob. i. 10 (Böckh *Philol.* 160): *καὶ τὰ ἐν τᾷ σφαίρᾳ σώματα* (the five regular bodies) *πέντε ἐντί. τὰ ἐν τᾷ σφαίρᾳ* (the bodies which are in the world—Heeren and Meineke would omit these words) *πῦρ, ὕδωρ καὶ γᾶ καὶ ἀὴρ καὶ ὁ τᾶς σφαίρας ὅλκας* (such is the text of codex A. Böckh, and others read *ἁ τᾶς σφαίρας ὁλκάς*; Meineke, *ἁ τᾶς σφαίρας κυκλάς*; Schaarschmidt, *Fragm. d. Philol.* p. 50, *ὁ τᾶς σφαίρας ὄγκος*, or even *ἁ . . . . ὁλότας*; Heeren, *ὁ τᾶς σφαίρας ὅλκος*, which according to him designated æther as that which draws and moves the globe of the

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world. Perhaps we should read: *ὁ τ. σφ. κύκλος*, or *τὸ τ. σφ. ὅλας*) *πέμπτον*. Plut. *Plac.* ii. 6, 5 (Stob. i. 450, *Galen*. c. 11): *Πυθαγόρας πέντε σχημάτων ὄντων στερεῶν, ἅπερ καλεῖται καὶ μαθηματικά, ἐκ μὲν τοῦ κύβου φησὶ γεγονέναι τὴν γῆν, ἐκ δὲ τῆς πυραμίδος τὸ πῦρ, ἐκ δὲ τοῦ ὀκταέδρου τὸν ἀέρα, ἐκ δὲ τοῦ εἰκοσαέδρου τὸ ὕδωρ, ἐκ δὲ τοῦ δωδεκαέδρου τὴν τοῦ παντὸς σφαῖραν.* Cf. Stobæus, i. 356, where, as in Diog. viii. 25 (Alex. Polyh.), there is no mention of the fifth element: *οἱ ἀπὸ Πυθαγόρου τὸν κόσμον σφαῖραν κατὰ σχῆμα τῶν τεσσάρων στοιχείων.*

[1] In what concerns the four elements, there can be no doubt that the words of Philolaus have this meaning. It is only in regard to the fifth of the regular bodies, the dodecahedron, that a question might be raised. Are we to understand that the elementary particles of the substance which, according to Philolaus, has formed the globe of the world (i.e. the outer shell of the globe) present this form? or is it the globe itself which does so? There is one circumstance which favours the first of these theories, viz. that among the disciples of Plato all those who incline the most to Pythagoreanism, so far as our information extends on this subject, admit the fifth element, æther, in addition to the other four. This circumstance equally contradicts the idea that the author of the passage in question borrowed the fifth body from Aristotle. Vide p. 317.

[2] Vide Part ii. a, 675 sq. 3rd edition.

[3] For Simpl. *De Cœlo*, 252 b, 43 (Schol. *in Arist.* 510 a, 41 sq.), can scarcely have taken his statement from Theophrastus, to whom he refers merely for his assertion about Democritus. It is more probably derived from the pseudo-Timæus (*De An. Mundi*), from whom he has previously (452 b, 14) quoted a passage (p. 97 E sq.). This is most likely the source of the statement of Hermias, *Irris*, c. 16, which attributes to Pythagoras and his school the whole Platonic construction.

[4] The Platonic construction of the elementary bodies by means of right-angled triangles cannot be

of the elements belonged to the earlier philosophers, or was originated by Philolaus, and whether in connection with this the four elements, omitting the fifth, came from the Pythagoreans to Empedocles, or conversely with the addition of the fifth, from Empedocles to the Pythagoreans, is a question that the historical evidence does not enable us to decide;[1] there are grounds, however, for preferring the second of these alternatives. The theory of Philolaus presupposes too high a development of geometrical knowledge to be compatible with great antiquity, and we shall hereafter find that Empedocles was the first who introduced the more accurate conception of the elements, and maintained that they were four.[2] This construction, therefore, is probably to be attributed to Philolaus.

This conclusion is confirmed by the fact that the Pythagorean notions concerning the origin and constitution of the world, so far as we are acquainted with them, connect themselves with the other presuppositions of the system, independently of the doctrine of the

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applied to the dodecahedron. Consequently, if this construction were made the point of departure, it would be impossible to see in the dodecahedron a specific elementary form; and, in fact, Plato sets aside the dodecahedron, *Tim.* 55 C, cf. 40 A, in a manner which seems to imply that this fifth body was known to him from another source, but that he was unable to make use of it in his exposition. Independently of the Platonic method of reducing the elements to certain figures, there existed a second and simpler method, as is proved by the passage in Aristotle, *De Cœlo*, iii. 5, 304 a, 9 sq.

[1] The celebrated verses of the *Golden Poem* are of uncertain origin, vide p. 428, 3; 322. Evidence like that of Vitruvius, viii. *Præf.* (cf. Sextus, *Math.* x. 283; Diog. viii. 25), which attributes the doctrine of the four elements to Pythagoras and Epicharmus, as well as to Empedocles, cannot, of course, be taken into account. The fragment of the pseudo-Athamas, ap. Clem. *Strom.* vi. 624 D, is certainly not authentic.

[2] Vide *infra*, *Emped.*

elements. A fragment of Philolaus,[1] indeed, in regard to the origin of the world, maintains that the world always has been, and always will be; which would incline us to believe the statement[2] that the Pythagoreans in what they said of the formation of the universe intended only to assert the logical dependence of the derived in respect to the primitive, and not an origin of the universe in time.[3] But as we have before shown the spuriousness of the passage, and as Stobæus does not give us the sources or the reasons for his statement, no argument can be based on this evidence. On the other hand, Aristotle distinctly says that *none* of the earlier philosophers held the world to be without beginning, except in the sense of the doctrine which is never ascribed to the Pythagoreans, viz., that the substance of the world is eternal and imperishable, but that the world itself is subject to a constant vicissitude of generation and destruction;[4] and what we know of the theories of his predecessors only confirms this assertion.[1] The expedient, also, by which Stobæus, or rather the Neo-Pythagorean whom he here follows,[2] endeavours to save

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[1] Ap. Stob. 1, 420 (vide *supra*, p. 399, 1): *ἧς ὅδε ὁ κόσμος ἐξ αἰῶνος καὶ εἰς αἰῶνα διαμένει . . . . εἷς ἐὼν καὶ συνεχὴς καὶ φύσι διαπνεόμενος καὶ περιαγεόμενος ἐξ ἀρχιδίω.* It is immaterial in regard to the question before us, whether we read with Meineke, instead of *ἀρχιδίω*, *ἀϊδίω*, or, still better, with Rose (*Arist. lib. ord.*, p. 35), *ἀρχὰς ἀϊδίω*.

[2] Stob. i. 450: *Πυθαγόρας φησὶ γεννητὸν κατ' ἐπίνοιαν τὸν κόσμον οὐ κατὰ χρόνον.* That Pythagoras regarded the world as never having had a beginning is often affirmed by later writers, vide *inf.* p. 440, 2, *e.g.* Varro, *De re rust.* ii. 1, 3, who ascribes to him the doctrine of the eternity of the human race; Censorin. *Di. Nat.* 4, 3; Tertull. *Apologet.* 11; Theophilus, *Ad Autol.* iii. 7, 26, who for that reason accuses Pythagoras of setting the necessity of nature in the place of Providence.

[3] So Ritter thinks, i. 417. But in maintaining at the same time (*ibid.* p. 436, vide *supra*, p. 404) that the Pythagoreans held the gradual development of the world, he evidently contradicts himself. Brandis, i. 481; Chaignet, ii. 87; Rohr, *De Philol. Fragm.* *περὶ ψυχῆς*, p. 31.

[4] *De Cœlo*, i. 10, 279 b, 12: *γενόμενον μὲν ἅπαντες εἶναί φασιν [τὸν οὐρανὸν], ἀλλὰ γενόμενον οἱ μὲν ἀΐδιον, οἱ δὲ φθαρτὸν . . . οἱ δ' ἐναλλὰξ ὁτὲ μὲν οὕτως ὁτὲ δὲ ἄλλως ἔχειν φθειρόμενον, καὶ τοῦτο ἀεὶ δια-*

τελεῖν οὕτως ὥσπερ Ἐμπεδοκλῆς ὁ Ἀκραγαντῖνος καὶ Ἡράκλειτος ὁ Ἐφέσιος. In regard to these last, it is said, p. 280 a, 11, that their opinion accords with the theory which represents the world as eternal, and only subject to a change of form. Cf. *Phys.* viii. i. 250 b, 18: ἀλλ' *ὅσοι μὲν ἀπείρους τε κόσμους εἶναί φασι καὶ τοὺς μὲν γίγνεσθαι τοὺς δὲ φθείρεσθαι τῶν κόσμων, ἀεί φασιν εἶναι κίνησιν . . . ὅσοι δ' ἕνα* (sc. *κόσμον εἶναι*), *ἢ οὐκ ἀεὶ* (= *ἢ ἀπείρων ὄντων οὐκ ἀεὶ τοὺς μὲν γίγνεσθαι*, etc. the doctrine of Empedocles) *καὶ περὶ τῆς κινήσεως ὑποτίθενται κατὰ λόγον.*

[1] Chaignet (i. 249; ii. 84) appeals, in opposition to this opinion, to the well-known saying of Heracleitus (*inf.* vol. ii. *Her.*). But as I have already observed in *Hermes*, x. 187, that which Heracleitus here characterises as uncreated and imperishable is not the *system of the world*, the eternity of which was taught by Aristotle and the pseudo-Philolaus, but only the *πῦρ ἀείζωον*, the primitive substance which, in developing itself, formed the world, and into which the world resolves itself. All the physicists presuppose such an uncreated principle, without deducing from it the eternity of the world, cf. on *Xenoph.* The same answer may be given to Rohr's objection (p. 31), urging that in the fragment quoted p. 372, 1, Philolaus called the *ἐστὼ τῶν πραγμάτων* eternal. The *ἐστὼ τῶν πραγμάτων*, the Limit and the Unlimited, may be eternal; but it does not follow that the world formed from it is also eternal. Lastly, if Aristotle (*Metaph.* xiv. 3, 1091 a, 12) says, against the Platonic theory of numbers, *ἄτοπον δὲ καὶ γένεσιν ποιεῖν ἀϊδίων ὄντων*, we cannot conclude from this passage, as Chaignet does (ii. 87; in his citation he is more than inaccurate) that the Pythagoreans, in describing the formation of the world, did not intend to discuss a creation of the world in time. This remark (even if it were certainly proved to refer to the Pythagoreans) is not concerned with the formation of the world, but with the origin of numbers from the Great and Small. Now Aristotle, speaking in his own name, describes numbers as eternal. If Chaignet thinks he can prove by the help of the passage (*De Cœlo*, i. 10; vide preceding note) that the eternity of the world was taught before Aristotle, he completely misunderstands the sense of the passage; *ἀΐδιος* there means infinite duration, not the absence of commencement, which alone is here in question.

[2] We have elsewhere shown (Part iii. b, 114 sq.) how general the doctrine of the eternity of the world was among the Neo-Pythagoreans. That the statement of Stobæus only reproduces their opinion, is proved by his attributing to Pythagoras, whose doctrine is unknown to Aristotle, a distinction which greatly transcends the standpoint of his epoch, and in reality is only affirmed by the Platonic school. Chaignet

the eternity of the world for the Pythagorean system, is attributed by Aristotle to the Platonists[1] only; neither he nor his commentators ever mention the Pythagoreans in that connection. This would surely have been impossible if he had been acquainted with an exposition of Philolaus or any other Pythagorean, which not only maintained that the world was without beginning or end in the most decided manner, but on the very grounds brought forward in his own system. Irrespectively of this objection, however, it is most improbable that the ancient Pythagorians should have conceived the universe as an eternal product of the world-creating energy. The distinction between the logical dependence of things on their causes, and their origin in time, requires a longer practice and a finer development of thought than we can suppose possible among the earliest thinkers. If they enquired into the origin of the world, it was natural for them to think of its commencement in time: as we see from the ancient theogonies and cosmogonies. Not till some time had elapsed was it necessary to abandon this point of view, and then on two considerations: 1. That matter must

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and Rohr consider that they have found in the testimony of Stobæus sufficient evidence as to the doctrine of Pythagoras and the ancient Pythagoreans. But we cannot trust writers, whose sources it is impossible to trace beyond the Neo-Pythagorean epoch; and least of all, can we trust so recent a compiler.

[1] *De Cœlo*, i. 10, 279 b, 30: ἣν δέ τινες βοήθειαν ἐπιχειροῦσι φέρειν ἑαυτοῖς τῶν λεγόντων ἄφθαρτον μὲν εἶναι γενόμενον δὲ, οὐκ ἔστιν ἀληθής· ὁμοίως γάρ φασι τοῖς τὰ διαγράμματα γράφουσι καὶ σφᾶς εἰρηκέναι περὶ τῆς γενέσεως, οὐχ ὡς γενομένου ποτὲ, ἀλλὰ διδασκαλίας χάριν ὡς μᾶλλον γνωριζόντων, ὥσπερ τὸ διάγραμμα γιγνόμενον θεασαμένους. It is clear from what follows that certain Platonists are here intended. Simplicius and other writers say that Xenocrates is alluded to, and also Speusippus.

be without origin, and 2, that the world-forming energy can never be conceived as inactive. The former idea, as far as we know, was first enunciated by Parmenides, the latter by Heracleitus; and the conclusion drawn thence even by them and their successors was not the eternity of our universe: Parmenides inferred from his proposition the impossibility of becoming and passing away, and accordingly he declared the phenomenal world generally to be illusion and deception. Heracleitus, Empedocles, and Democritus maintained, each in his own way, an infinity of worlds of which every one had had a beginning in time. Lastly, Anaxagoras, adopting the ordinary theory of a sole and unique world, supposed this likewise to have shaped itself at a definite period out of the unformed primitive matter. On the other hand, Aristotle never thought of attributing a description of the origin of the world to the philosophers who maintained its eternity so consciously, and on principle, as the reputed Philolaus. There is, therefore, little reason to doubt that what is stated concerning the Pythagorean theory of the formation of the world really refers to a beginning of the world in time. In fact, any other interpretation of the texts is inadmissible. According to the Pythagoreans, the central fire was first formed in the heart of the universe; this is also called by them the One or the Monad, because it is the first body of the world; the mother of the Gods, because it is this which engenders the heavenly bodies; they also call it Hestia, the hearth or the altar of the universe, the guard, the citadel or the throne of Zeus, because it is the central point in which the world-sustaining energy has its seat.[1] How this beginning of the world itself came about, Aristotle (*loc. cit.*) says they were unable to explain, and we cannot certainly discover from his language whether they even attempted an explanation.[2] After the formation of the central fire, the nearest portions of the unlimited, which according to the obscure notions of the Pythagoreans signified at once infinite space and infinite matter, were constantly being attracted to this centre, and becoming limited through this attraction,[1] until by the perpetual continuation and extension of that process (thus we must complete the accounts) the system of the universe was at last finished.

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[1] Vide p. 444, 4; 446, 1; Arist. *Metaph.* xiv. 3; xiii. 6 (*supra*, p. 400; 407, 2); Philol. ap. Stob. i. 468: *τὸ πρᾶτον ἁρμοσθὲν τὸ ἓν ἐν τῷ μέσῳ τᾶς σφαίρας* (the sphere of the world) *Ἑστία καλεῖται.* The same, *ibid.* 360: *ὁ κόσμος εἷς ἐστιν· ἤρξατο δὲ γίγνεσθαι ἄχρι τοῦ μέσου.* The text may be more exact, but *ἀπὸ τοῦ μέσου* would certainly be clearer. *Ibid.* p. 452; vide *infra*, p. 446, 1; Plut. *Numa*, c. 11: *κόσμου οὗ μέσον οἱ Πυθαγορικοὶ τὸ πῦρ ἱδρύσθαι νομίζουσι, καὶ τοῦτο Ἑστίαν καλοῦσι καὶ μονάδα.* Cf. Iambl. *Th. Arithm.* p. 8: *πρὸς τούτοις φασὶ* [*οἱ Πυθ.*] *περὶ τὸ μέσον τῶν τεσσάρων στοιχείων κεῖσθαί τινα ἐναδικὸν διάπυρον κύβον. οὗ τὴν μεσότητα τῆς θέας* (instead of this word, we should doubtless read *θέσεως*) *καὶ Ὅμηρον εἰδέναι λέγοντα* (Il. viii. 16). Therefore, continues the author, Parmenides, Empedocles, and others say: *τὴν μοναδικὴν φύσιν Ἑστίας τρόπον ἐν μέσῳ ἱδρύσθαι καὶ διὰ τὸ ἰσόῤῥοπον φυλάσσειν τὴν αὐτὴν ἕδραν.* We see from these passages how the *πρῶτον ἓν* in Aristotle is to be understood. The central fire, because of its place and its importance for the universe, was called the One in the same sense that the earth, for example, was called two, and the sun, seven (vide *supra*, p. 421). But how this determinate part of the world was related to the number one, or distinguished from it, was not stated. Vide p. 410 sq.

[2] Aristotle says (*Metaph.* xiv. 3), vide *sup.* p. 400: *τοῦ ἑνὸς συσταθέντος εἴτ' ἐξ ἐπιπέδων εἴτ' ἐκ χροιᾶς*, which signifies indeed much the same thing as *ἐξ ἐπιπέδων*; cf. Arist. *De sensu*, 3, 439 a, 30: *οἱ Πυθαγόρειοι τὴν ἐπιφάνειαν χροιὰν ἐκάλουν εἴτ' ἐκ σπέρματος εἴτ' ἐξ ὧν ἀπορούσιν εἰπεῖν.* But we cannot infer from this (as Brandis does, i. 487) that the Pythagoreans really followed all these methods to explain the formation of the body. still less that all these modes of explication had reference to the Central fire. But Aristotle might express himself in this way, even had the Pythagoreans said nothing as to the manner in which bodies were formed. Similarly in *Metaph.* xiv. 5, 1092 a, 21 sq., he puts the question to the adherents of the number-theory—'how numbers result from their elements,' *μίξει* or *συνθέσει, ὡς ἐξ ἐνυπαρχόντων*, or *ὡς ἀπὸ σπέρματος*, or *ὡς ἐκ τοῦ ἐναντίου*;

The universe was conceived by the Pythagoreans as a sphere.[2] In the centre of the whole they placed, as we have seen, the central fire; around this ten heavenly bodies[3] moving from west to east describe their orbits;[4] farthest off, the heaven of fixed stars, next the five planets; then the sun, the moon, the earth, and tenth, and last, the counter-earth, which the Pythagoreans invented in order to complete the sacred number of ten. The extreme limit of the universe was formed by the fire of the periphery, which corresponded to the central fire.[5] The stars they believed were fixed in transparent circles or spheres, by the revolution of which upon their axes they were carried round.[1]

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[1] Arist. *loc. cit.*; cf. *supra*, p. 400, 1. The same doctrine seems to be the foundation of the conservation in Plut. *Plac.* ii. 6, 2: Πυθαγόρας ἀπὸ πυρὸς καὶ τοῦ πέμπτου στοιχείου [ἄρξασθαι τὴν γένεσιν τοῦ κόσμου], only that here the unlimited is confounded with the περιέχον of Aristotle, the Æther.

[2] Σφαῖρα is the usual expression, p. 442, 1; 436, 4.

[3] The Pythagoreans are said to have been the first to determine their order in a precise manner. Simpl. *De Cœlo*, 212 a, 13 (*Schol.* 497 a, 11): ὡς Εὔδημος ἱστορεῖ, τὴν τῆς θέσεως τάξιν εἰς τοὺς Πυθαγορείους πρώτους ἀναφέρων.

[4] As follows as a matter of course in regard to the earth and the other bodies of the universe. For the apparent diurnal motion of the sun, from east to west, could not be explained by the motion of the earth around the central fire, unless that motion was from west to east. Whether the Pythagoreans, like Aristotle (cf. Böckh, *d. Kosm. System*, p. 112 sq.), understood this movement from west to east as a movement from east to east, or from right to right, and called the east side the right, because the movement starts from that side; as Stobæus thinks, *Ecl.* i. 358 (Plut. *Plac.* ii. 10; Galen, c. 11, p. 269), seems to me doubtful.

[5] Arist. *De Cœlo*, ii. 13, sub init.: τῶν πλείστων ἐπὶ τοῦ μέσου κεῖσθαι λεγόντων [τὴν γῆν] . . . ἐναντίως οἱ περὶ τὴν Ἰταλίαν, καλούμενοι δὲ Πυθαγόρειοι λέγουσιν. ἐπὶ μὲν γὰρ τοῦ μέσου πῦρ εἶναι φασι, τὴν δὲ γῆν ἓν τῶν ἄστρων οὖσαν κύκλῳ φερομένην περὶ τὸ μέσον νύκτα τε καὶ ἡμέραν ποιεῖν. ἔτι δ' ἐναντίαν ἄλλην ταύτῃ κατασκευάζουσι γῆν, ἣν ἀντίχθονα ὄνομα καλοῦσιν, οὐ πρὸς τὰ φαινόμενα τοὺς λόγους καὶ τὰς αἰτίας ζητοῦντες, ἀλλὰ πρός

τινας λόγους καὶ δόξας αὐτῶν τὰ φαινόμενα προσέλκοντες καὶ πειρώμενοι συγκοσμεῖν (which is explained in the following manner in *Metaph.* i. 5, 986 a, 8): *ἐπειδὴ τέλειον ἡ δεκὰς εἶναι δοκεῖ καὶ πᾶσαν περιειληφέναι τὴν τῶν ἀριθμῶν φύσιν, καὶ τὰ φερόμενα κατὰ τὸν οὐρανὸν δέκα μὲν εἶναί φασιν, ὄντων δὲ ἐννέα μόνον τῶν φανερῶν διὰ τοῦτο δεκάτην τὴν ἀντίχθονα ποιοῦσιν*), *τῷ γὰρ τιμιωτάτῳ οἴονται προσήκειν τὴν τιμιωτάτην ὑπάρχειν χώραν, εἶναι δὲ πῦρ μὲν γῆς τιμιώτερον, τὸ δὲ πέρας τῶν μεταξὺ, τὸ δ' ἔσχατον καὶ τὸ μέσον πέρας . . . ἔτι δ' οἵ γε Πυθαγόρειοι καὶ διὰ τὸ μάλιστα προσήκειν φυλάττεσθαι τὸ κυριώτατον τοῦ παντός· τὸ δὲ μέσον εἶναι τοιοῦτον· ὃ Διὸς φυλακὴν ὀνομάζουσι, τὸ ταύτην ἔχον τὴν χώραν πῦρ.* *Ibid*, 293, b, 19: [*τὴν γῆν φασι*] *κινεῖσθαι κύκλῳ περὶ τὸ μέσον, οὐ μόνον δὲ ταύτην ἀλλὰ καὶ τὴν ἀντίχθονα.* Stob. *Ecl.* i. 488: *Φιλόλαος πῦρ ἐν μέσῳ περὶ τὸ κέντρον, ὅπερ Ἑστίαν τοῦ παντὸς καλεῖ καὶ Διὸς οἶκον καὶ Μητέρα θεῶν, βωμόν τε καὶ συνοχὴν καὶ μέτρον φύσεως· καὶ πάλιν πῦρ ἕτερον ἀνωτάτω τὸ περιέχον. πρῶτον δ' εἶναι φύσει τὸ μέσον, περὶ δὲ τοῦτο δέκα σώματα θεῖα χορεύειν* (hence probably the *χορεῖαι* of the stars, ap. Plato, *Tim.* 40 c) *οὐρανὸν* (that is to say, the heaven of fixed stars; it is clear from the end of the passage which will be quoted farther on, that the expression belongs to the narrator), *πλανήτας, μεθ' οὓς ἥλιον, ἐφ' ᾧ σελήνην, ὑφ' ᾗ τὴν γῆν, ὑφ' ᾗ τὴν ἀντίχθονα, μεθ' ἃ σύμπαντα τὸ πῦρ Ἑστίας ἐπὶ τὰ κέντρα* [*τῷ κέντρῳ*] *τάξιν ἐπέχον.* Alexander *ad Metaph.* i. 5, p. 20, Bon. (vide *supra*, p. 402, 2), on the subject of the sun: *ἑβδόμην γὰρ αὐτὸν τάξιν ἔχειν* [*φασὶν οἱ Πυθ.*] *τῶν περὶ τὸ μέσον καὶ τὴν Ἑστίαν κινουμένων δέκα σωμάτων· κινεῖσθαι γὰρ μετὰ τὴν τῶν ἀπλανῶν σφαῖραν καὶ τὰς πέντε τὰς τῶν πλανήτων, μεθ' ἣν* [? *ὃν*] *ὀγδόην τὴν σελήνην, καὶ τὴν γῆν ἐνάτην, μεθ' ἣν τὴν ἀντίχθονα.* Böckh has already refuted (*Philol.* 103 sq.) the anonymous author in Photius, p. 439 b, Bekk, who attributes to Pythagoras twelve Diacosms and passes over the counter-earth, the fire of the centre and of the circumference, and places instead a circle of fire, a circle of air, and a circle of water, between the moon and the earth.

[1] Alexander treats this opinion as Pythagorean; Theo (*Astron.* p. 212, Mart.) mentions Pythagoras himself as having been the first to discover *κατ' ἰδίων τινῶν κύκλων καὶ ἐν ἰδίαις δὲ σφαίραις* (Cod. *ἰδ. διαφοραῖς*) *ἐνδεδεμένα καὶ δι' ἐκείνων κινούμενα* (sc. *τὰ πλανώμενα*) *δοκεῖν ἡμῖν φέρεσθαι διὰ τῶν ζῳδίων.* We find these ideas in Plato and Parmenides, which confirms their antiquity, and proves that the Pythagoreans, perhaps after the example of the founder of their school, were the authors, or, at any rate, the chief representatives, of the theory of the spheres, which was of such importance in Greek philosophy. It is impossible to decide whether, in their opinion, all the heavenly bodies were carried along by spheres, *i.e.* by hollow globes; or whether the fixed stars alone were fastened to a hollow globe, and the planets to simple circles, as Plato supposed. Röth (ii. a, 808 sq., 244) attributes to the

Among the bodies of the universe the central fire occupies the first place, not only from its position, but because, on account of this position, it is the centre of gravity and support of the whole, the measure and bond of the universe,[1] which indeed sprang solely from it and through its operation. The Pythagoreans were accustomed to conceive all such relations not merely mathematically and mechanically, but at the same time dynamically; we should therefore have expected that they would attribute to the central fire an important influence upon the whole, even if this were not confirmed by the analogy of their doctrine of the formation of the world, and their opinions (presently to be considered) on the origin of the fire of the sun.[2] Later accounts, however, in connection with this, assert that the soul, or the spirit of the universe, was supposed to

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Pythagoreans, and even to Pythagoras, the theories of eccentric circles, and epicycles. Not only are we without sufficient evidence on this point (for Nicomachus and Iamblichus ap. Simpl. *De Cœlo*, 227 a, 17; *Schol.* 503 b, 11, are not trustworthy), but the theory is opposed to the whole tenor of ancient astronomy. As to the opinion of Röth (*l. c.*), according to which Eudoxus, Callippus, and Aristotle were acquainted with the theory of epicycles, it becomes quite untenable after due consideration of the passages in question in Aristotle and his commentators. Vide Part ii. 344 sqq., 2nd ed.

[1] Vide p. 441, 1; 444, 4; also Stob. i. 452: *τὸ δὲ ἡγεμονικὸν* [*Φιλόλαος ἔφησεν*] *ἐν τῷ μεσαιτάτῳ πυρὶ, ὅπερ τρόπεως δίκην προϋπεβάλλετο τῆς τοῦ παντὸς σφαίρας, ὁ δημιουργός*, where the *ἡγεμονικὸν* is certainly Stoic and the Demiurgus Platonic; but the comparison of the central fire with the keel of the ship of the universe seems to be truly Pythagorean. Nicom. (ap. Phot. *Cod.* 187, p. 143 a, 32) also, among many later documents, brings forward a statement, according to which the Monad was called by the Pythagoreans *Ζανὸς πύργος*, which must have come from some ancient tradition. Proclus, *in Tim.* 172 B: *καὶ οἱ Πυθαγόρειοι δὲ Ζανὸς πύργον ἢ Ζανὸς φυλακὴν ἀπεκάλουν τὸ μέσον.*

[2] This is confirmed by the testimony of Parmenides (the Pythagorean origin of this testimony will be shown in its proper place), according to which the divinity that regulates the whole has his seat in the midst of the universe.

be diffused throughout the whole[1] from the central fire, or from the circumference; but this is probably a subsequent expansion and modification of the ancient doctrine, and the source of this modification must be sought in the doctrines of Plato and of the Stoics.[2]

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[1] For example, the Pseudo-Philolaus ap. Stob. i. 420 (cf. p. 438, 3) *ἔχει δὲ καὶ τὰν ἀρχὰν τᾶς κινάσιός τε καὶ μεταβολᾶς ὁ κόσμος εἷς ἐὼν καὶ συνεχὴς καὶ φύσι διαπνεόμενος καὶ περιαγεόμενος ἐξ ἀρχᾶς ἀϊδίω. καὶ τὸ μὲν ἀμετάβολον* (the unchangeable part of the world) *ἀπὸ τᾶς τὸ ὅλον περιεχούσας ψυχᾶς μέχρι σελάνας περαιοῦται, τὸ δὲ μεταβάλλον ἀπὸ τᾶς σελάνας μέχρι τᾶς γᾶς· ἐπεὶ δέ γε καὶ τὸ κινέον ἐξ αἰῶνος εἰς αἰῶνα περιπολεῖ, τὸ δὲ κινεόμενον, ὡς τὸ κινέον ἄγει, οὕτω διατίθεται, ἀνάγκα τὸ μὲν ἀεικίνατον* (Chaignet, ii. 81, proposes to substitute *ἀκίνατον* for this word, but the immobility of the *κινέον* is not to be proved by alleging that it *ἐξ αἰῶνος περιπολεῖ*), *τὸ δὲ ἀειπαθὲς εἶμεν, καὶ τὸ μὲν νῶ καὶ ψυχᾶς ἀνάκωμα*(?)*πᾶν, τὸ δὲ γενέσιος καὶ μεταβολᾶς*. Alex. Polyh. ap. Diog. viii. 25 sqq.: *κόσμον ἔμψυχον, νοερὸν, σφαιροειδῆ . . ἀνθρώποις εἶναι πρὸς θεοὺς συγγένειαν κατὰ τὸ μετέχειν ἄνθρωπον θερμοῦ, διὸ καὶ πρυνοεῖσθαι τὸν θεὸν ἡμῶν . . . διήκειν τ' ἀπὸ τοῦ ἡλίου ἀκτῖνα διὰ τοῦ αἰθέρος τοῦ τε ψυχροῦ καὶ παχέος* (air and water) . . . *ταύτην δὲ τὴν ἀκτῖνα καὶ εἰς τὰ βένθη δύεσθαι καὶ διὰ τοῦτο ζωοποιεῖν πάντα . . . εἶναι δὲ τὴν ψυχὴν ἀπόσπασμα αἰθέρος καὶ τοῦ θερμοῦ καὶ τοῦ ψυχροῦ . . ἀθάνατόν τ' εἶναι αὐτὴν, ἐπειδήπερ καὶ τὸ ἀφ' οὗ ἀπέσπασται ἀθάνατόν ἐστι*. Cic. *N. D.* i. 11, 27: *Pythagoras, qui censuit, animum esse per naturam rerum omnem intentum et commeantem, ex quo nostri animi carperentur*. Cato, 21, 78: *Audiebam Pythagoram Pythagoreosque . . nunquam dubitasse, quin ex universa mente divina delibatos animos haberemus*. Plut. *Plac. Qu.* viii. 4, 3, p. 1007: to the question, 'What is Time?' Pythagoras replied, 'The Soul of the World.' *Plac.* iv. 7, 1: *Πυθ. Πλάτων ἄφθαρτον εἶναι τὴν ψυχήν· ἐξιοῦσαν γὰρ εἰς τὴν τοῦ παντὸς ψυχὴν ἀναχωρεῖν πρὸς τὸ ὁμογενές*. Sext. *Math.* ix. 127: The Pythagoreans and Empedocles teach that men are not only related to each other and the gods, but also to the animals, *ἓν γὰρ ὑπάρχειν πνεῦμα τὸ διὰ παντὸς τοῦ κόσμου διῆκον ψυχῆς τρόπον, τὸ καὶ ἑνοῦν ἡμᾶς πρὸς ἐκεῖνα*· for this reason it is wrong to kill and eat animals. Stob. i. 453; Simpl. *De Cælo*, 229 a, 38 (*Schol. in Arist.* 505 a, 32): *οἱ δὲ γνησιώτερον αὐτῶν* (*τῶν Πυθαγορικῶν*) *μετασχόντες πῦρ μὲν ἐν τῷ μέσῳ λέγουσι τὴν δημιουργικὴν δύναμιν τὴν ἐκ μέσου πᾶσαν τὴν γῆν ζωογονοῦσαν καὶ τὸ ἀπεψυγμένον αὐτῆς ἀναθάλπουσαν· διὸ οἱ μὲν Ζανὸς πύργον αὐτὸ καλοῦσιν, ὡς αὐτὸς ἐν τοῖς Πυθαγορικοῖς ἱστόρησεν, οἱ δὲ Διὸς φυλακὴν, ὡς ἐν τούτοις, οἱ δὲ Διὸς θρόνον, ὡς ἄλλοι φασίν*. *Cod. Coisl. Schol.* 505 a, 9: *διὸ καὶ πλεχθῆναι τὴν τοῦ παντὸς ψυχὴν ἐκ μέσου πρὸς τὸν ἔσχατον οὐρανόν*.

[2] In regard to the fragment of Philolaus and the testimony of Alexander, it has already been shown (p. 393, 2; 399, 1) that they cannot be considered authentic. As to the question before us, it must,

Aristotle, in discussing the theories of the ancient philosophers about the soul,[1] quotes from the Pythagoreans only the celebrated assertion that the particles emanating from the sun are souls, and he infers from hence, not without difficulty, that they regarded the soul as the moving principle. Now it is very improbable that Aristotle should have confined himself to this

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apart from what is said in the text, at once appear strange that the soul (in agreement with Plato and Aristotle) should be relegated to the periphery of the world, without mention being made of the central fire, with which the author seems wholly unacquainted. It is equally strange that the soul and the *θεῖον* should be regarded as the eternally moved and the eternally moving (the Pythagoreans considered the *θεῖα σώματα*, or the constellations, but not the *θεῖον* in the absolute sense of the word as subject to movement. On the contrary, they placed movement on the side of the Unlimited, cf. p. 402, 1; 381, 1). It is easy to see in this a reproduction of a passage in Plato (*Crat.* 397 c), and of another in Aristotle (*De An.* 1, 2, vide *infra*, p. 458, 4), on Alcmæon, the result of a misunderstanding. Nor can we fail to recognise the influence of Platonic and Aristotelian ideas in the doctrine of the eternal movement of the soul in a circle, and the language used to express that doctrine. In the exposition of Alexander, and in the short statement of Sextus, the Stoic element is equally apparent; witness the *πνεῦμα διὰ παντὸς διῆκον*, the conception of the human soul originating from the Divine soul by emanation, the cosmology, so different from that of the Pythagoreans, which we shall discuss further on, and the number four applied to the element. Cicero speaks in quite the same manner, and it is very possible that this writer, who did not hesitate to use the most recent and the most convenient documents in his exposition of ancient systems, may have in this instance referred to Alexander himself. The definition given in Plutarch does not seem to belong to the ancient Pythagoreans. The *ἡγεμονικὸν* of Stobæus is evidently Stoic. Simplicius, and the writer who reproduces his evidence, clearly did not know how to distinguish the original doctrines of Pythagoreanism from the new. Nor can we mistake the recent origin of a fragment quoted by Clemens, *Cohort.* 47, c: *ὁ μὲν θεὸς εἷς· χ' οὗτος δὲ οὐχ, ὥς τινες ὑπονοοῦσιν, ἐκτὸς τᾶς διακοσμήσιος, ἀλλ' ἐν αὐτᾷ, ὅλος ἐν ὅλῳ τῷ κύκλῳ, ἐπίσκοπος πάσας γενέσιος, κρᾶσις τῶν ὅλων· ἀεὶ ὢν καὶ ἐργάτας τῶν αὐτοῦ δυνάμιων καὶ ἔργων ἀπάντων, ἐν οὐρανῷ φωστὴρ καὶ πάντων πατὴρ, νοῦς καὶ ψύχωσις τῷ ὅλῳ κύκλῳ (τῶ-ω-ω), πάντων κίνασις.* (The same in the recension of Po. Justin, Part iii. b, 102, 1, 2 A.) The polemic of the Stoic Pantheism against the Aristotelian Deism is manifest here.

[1] *De An.* i. 2; vide *inf.* p. 476, 2.

assertion, if such important and fully-developed conceptions as those we have quoted were known to him; and it is equally unlikely that conceptions of such importance should have escaped the notice of anyone so intimately acquainted as Aristotle was with the Pythagorean doctrine.[1] We cannot therefore ascribe the doctrine of the world-soul to the Pythagoreans, and even if they supposed that heat and vital force flowed into the universe from the central fire, this ancient materialistic notion is very different from the theory of a world-soul conceived as a particular incorporeal essence.

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[1] The second hypothesis is evidently impossible. The first loses any probability it might seem to have, if we consider with what care and completeness Aristotle quotes everything which his predecessors have said on the subject of the soul. At the commencement, and at the end of the chapter, he expresses his intention of enumerating all previous opinions: *τὰς τῶν προτέρων δόξας συμπαραλαμβάνειν ὅσοι τι περὶ αὐτῆς ἀπεφήναντο*, and at the end: *τὰ μὲν οὖν παραδεδομένα περὶ ψυχῆς . . . ταῦτ' ἐστίν.* That which the pseudo-Philolaus asserts so decidedly, namely, that the soul is the *κινητικὸν*, is precisely what Aristotle dares not attribute categorically to the Pythagoreans (404 a, 16: *ἔοικε δὲ καὶ τὸ παρὰ τῶν Πυθαγορείων λεγόμενον τὴν αὐτὴν ἔχειν διάνοιαν*). It would be very surprising that the Pythagoreans should not be named among those who regarded the soul as one of the elements, if they had really said what Alexander Polyhistor, Cicero, and others, attributed to them. The only thing that might be objected is that Aristotle was speaking of the human soul, and not of the soul of the world. But this is not the case. He speaks of the soul in general, and notably of the soul of the world: the pretended Pythagoreans speak also of the human soul. Now Aristotle expressly distinguishes the Pythagoreans from those who considered the soul as the *ἀρχὴ τῆς κινήσεως* (for example, the pseudo-Philolaus) when, after describing their ideas on the soul (404 a, 20), he proceeds thus, 404 a, 20: *ἐπὶ ταὐτὸ δὲ φέρονται καὶ ὅσοι λέγουσι τὴν ψυχὴν τὸ αὑτὸ κινοῦν*, &c. He could not have expressed himself in such a manner if they had been the earliest precursors of Plato on this point; cf. Hermes, x. 190. The objections made by Chaignet and Rohr have no great weight. The former says (ii. 176): Since Aristotle concludes from the Pythagorean conception of solar corpuscles that the soul is endowed with motive force (404 a, 21, *ἐοίκασι γὰρ οὗτοι πάντες ὑπειληφέναι τὴν κίνησιν οἰκειότατον εἶναι τῇ ψυχῇ*), it necessarily follows from this that he attributes to the Pythagoreans a World-soul. Rohr speaks in a similar manner (*l. c.*, p. 21). But the fact that Aristotle is here making a simple deduction, of which he himself is not certain, is enough to show the impossibility of his having had in his possession so precise an explication as that of our fragment. Chaignet (ii. 84) appeals to the other fact that, according to Aristotle (vide *infra*, *Alcmæon*), Alcmæon also ascribes to the stars a soul eternally in motion. But Aristotle says nothing of the kind. He merely affirms that, according to Alcmæon, the *θεῖα*, the

Around the central fire, the earth, and between the two, the counter-earth, revolve in such a manner, that the earth always turns the same side to the counter-earth and the central fire; and for this reason, the rays of the central fire do not come directly to us, but indirectly from the sun. When the earth is on the same side of the central fire as the sun, we have day; when it is on the other side, night.[1] Some accounts,

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sky and the stars, are in perpetual movement, which does not at all imply that this philosopher reduced all movements to a unique spiritual principle, distinct from the body of the world, and diffused throughout the universe. Lastly, Rohr (*l. c.*, p. 21) cites Plato's *Phædo*, 86 B sqq., to prove that the opinion spoken of by Arist. *De An.* i. 4, and according to which the soul is regarded as the harmony of the body, belonged to the Pythagoreans. But I do not see how we can infer from this that the Pythagoreans admitted a soul of the world (did Aristoxenus and Dicæarchus admit one?). We shall presently see that we have no right to attribute such a doctrine to the Pythagorean school.

[1] Arist. *De Cælo*, ii. 13; vide *supra*, p. 444, 4; Simpl. *in h. l.* 229 a, 16 (*Schol.* 505 a, 19): οἱ Πυθαγόρειο. . . . ἐν μὲν τῷ μέσῳ τοῦ παντὸς πῦρ εἶναί φασι, περὶ δὲ τὸ μέσον τὴν ἀντίχθονα φέρεσθαί φασι, γῆν οὖσαν καὶ αὐτὴν, ἀντίχθονα δὲ καλουμένην διὰ τὸ ἐξ ἐναντίας τῇδε τῇ γῇ εἶναι· μετὰ δὲ τὴν ἀντίχθονα ἡ γῆ ἥδε, φερομένη καὶ αὐτὴ περὶ τὸ μέσον, μετὰ δὲ τὴν γῆν ἡ σελήνη (οὕτω γὰρ αὐτὸς ἐν τῷ πέρατι τῶν Πυθαγορικῶν ἱστορεῖ)· τὴν δὲ γῆν ὡς ἓν τῶν ἄστρων οὖσαν κινουμένην περὶ τὸ μέσον κατὰ τὴν πρὸς τὸν ἥλιον σχέσιν νύκτα καὶ ἡμέραν ποιεῖν· ἡ δὲ ἀντίχθων κινουμένη περὶ τὸ μέσον καὶ ἑπομένη τῇ γῇ οὐχ ὁρᾶται ὑφ' ἡμῶν διὰ τὸ ἐπιπροσθεῖν ἡμῖν ἀεὶ τὸ τῆς γῆς σῶμα. According to this passage the side of the earth which we inhabit is always turned away from the central fire and the counter-earth. Plut. *Plac.* iii. 11, 3 (Galen, c. 21): Φιλόλαος ὁ Πυθαγόρειος, τὸ μὲν πῦρ μέσον· τοῦτο γὰρ εἶναι τοῦ παντὸς ἑστίαν. δευτέραν δὲ τὴν ἀντίχθονα· τρίτην δὲ ἣν οἰκοῦμεν γῆν ἐξ ἐναντίας κειμένην τε καὶ περιφερομένην τῇ ἀντίχθονι· παρ' ὃ καὶ μὴ ὁρᾶσθαι ὑπὸ τῶν ἐν τῇδε τοὺς ἐν

it is true, reject the central fire and the motion of

ἐκείνῃ. *Ibid.* 13: οἱ μὲν ἄλλοι μένειν τὴν γῆν· Φιλόλ. δὲ ὁ Πυθαγ. κύκλῳ περιφέρεσθαι περὶ τὸ πῦρ κατὰ κύκλου λοξοῦ ὁμοιοτρόπως ἡλίῳ καὶ σελήνῃ. Stob. i. 530 (similarly Plut. *Plac.* ii. 20, 7; Galen, c. 14, p. 275): Φιλόλαος ὁ Πυθαγόρειος ὑαλοειδῆ τὸν ἥλιον, δεχόμενον μὲν τοῦ ἐν τῷ κόσμῳ πυρὸς τὴν ἀνταύγειαν, διηθοῦντα δὲ πρὸς ἡμᾶς τό τε φῶς καὶ τὴν ἀλέαν, ὥστε τρόπον τινὰ διττοὺς ἡλίους γίγνεσθαι, τό τε ἐν τῷ οὐρανῷ πυρῶδες, καὶ τὸ ἀπ' αὐτοῦ πυροειδὲς κατὰ τὸ ἐσοπτροειδές· εἰ μή τις καὶ τρίτον λέξει τὴν ἀπὸ τοῦ ἐνόπτρου κατ' ἀνάκλασιν διασπειρομένην πρὸς ἡμᾶς αὐγήν. Achill. Tat. *in Ar. Prolegg.* c. 19, p. 138 Pet.: Φιλόλαος δὲ (τὸν ἥλιόν φησι) τὸ πυρῶδες καὶ διαυγὲς λαμβάνοντα ἄνωθεν ἀπὸ τοῦ αἰθερίου πυρὸς πρὸς ἡμᾶς πέμπειν τὴν αὐγὴν διά τινων ἀραιωμάτων, ὥστε κατ' αὐτὸν τρισσὸν εἶναι τὸν ἥλιον, etc. (the sense is the same as in Stobæus, but the text appears defective). In considering these statements, the first question that presents itself is: How did the Pythagoreans conceive the position of the counter-earth in regard to the earth and the central fire? From the nature of these things in themselves, two courses seem open. They might have placed it either between the earth and the central fire on the radius of the terrestrial orbit which goes from one to the other; or they might have placed it on the other side of the central fire, at the extremity of a line going from the earth through the central fire, and prolonged as far as the orbit of the counter-earth. Schaarschmidt (*Schrifst. d. Philol.* 33) quotes the ἐναντίαν, ἐξ ἐναντίας of Aristotle and Simplicius to prove that such, according to the Pythagoreans, should in reality be the position of the counter-earth, but this interpretation seems to me mistaken. We may very well suppose, with Böckh, that this expression means that the earth turns its face from the central fire, and turns it towards the exterior circumference; and that the contrary holds good of the counter-earth. If even we refer this expression simply to the situation of the counter-earth in regard to the earth, it simply implies that it is diametrically opposite to the earth; that is to say, is on the prolongation of the earth's axis (not on the side of it); whether on this side or that of the central fire is left undetermined. The opinion of Böckh is confirmed, not only by the word ἑπομένην in the text of Simplicius, but also by the whole analogy of the Pythagorean doctrine, according to which the series of heavenly bodies was continued without interruption from the periphery as far as the central fire, and not terminated on the other side of the central fire (cf. Böckh, *Kl. Schr.* iii. 320 sq., where some other objections of Schaarschmidt against the earlier exposition of Böckh are refuted). As to the sun and the solar light, Achilles Tatius (as well as Stobæus and the author from whom he takes his information) seems to admit that the solar light is the reflection of the fire of the circumference. Böckh (*Philol.* 124 sq.) thinks that this opinion is erroneous, and believes that the central fire is the luminous source, the rays of which the sun reflects to us; he afterwards (*Unters. üb. d. kosm. Syst. d. Platon*, 94) gave the preference to the opinion of Martin (*Etudes sur le Timée*, ii. 100), according to which the earth, and make the counter-earth the moon,[1] or the second hemisphere of the earth.[2] But this is an erroneous interpretation of the old Pythagorean doctrine, from the standpoint of later astronomy. It is impossible that these accounts can be based upon any tradition as to the theories of the ancient Pythagoreans, or of Pythagoras himself.[3] It is only among

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the sun concentrates and reflects, not only the light of the central fire, but also that of the external fire. No doubt the διηθεῖν would not exclude a reflection of the central fire (as Böckh has sufficiently shown, *Philol.* 127 sq.), but, on the other hand, the reflection of the triple sun (a doctrine which could not have come from Philolaus himself, cf. p. 316) is no proof that the solar light is derived from the central fire, and not from the fire of the periphery. Only it would seem that if this latter fire can enlighten the sun, it must also be visible to us. But we shall see further on that the Pythagoreans perhaps really thought they saw this fire in the milky way. This belief accords with the opinion (contained in all the passages quoted) that the rays of this fire, as well as those of the central fire, are concentrated and sent back by the sun, as by a sort of burning glass. It is not stated whether the Pythagoreans supposed that the other planets and fixed stars were foci of the same kind, but less intense, for these rays.

[1] Simpl. *l. c.* 229 a, 37; *Schol.* 505 a, 32: *καὶ οὕτω μὲν αὐτὸς τὰ τῶν Πυθαγορείων ἀπεδέξατο· οἱ δὲ γνησιώτερον αὐτῶν μετασχόντες*, etc. (vide *sup.* p. 447, 1) *ἄστρον δὲ τὴν γῆν ἔλεγον ὡς ὄργανον καὶ αὐτὴν χρόνου ἡμερῶν γάρ ἐστιν αὕτη καὶ νυκτῶν αἰτία . . . ἀντίχθονα δὲ τὴν σελήνην ἐκάλουν οἱ Πυθαγόρειοι, ὥσπερ καὶ αἰθερίαν γῆν*, etc. As the doctrine here given as purely Pythagorean is expressly distinguished from the Aristotelian exposition, we are all the more certain as to the origin of the former. Clemens (*Strom.* v. 614 C), even thinks that the Pythagoreans meant by the counter-earth, heaven, in the Christian sense of the word.

[2] Alex. Polyhistor. ap. Diog. viii. 25. The Pythagoreans taught *κόσμον . . . μέσην περιέχοντα τὴν γῆν καὶ αὐτὴν σφαιροειδῆ καὶ περιοικουμένην. εἶναι δὲ καὶ ἀντίποδας, καὶ τὰ ἡμῖν κάτω ἐκείνοις ἄνω.* Similarly the anonymous author, ap. Phot. *Cod.* 249 (vide p. 444, 4) says that Pythagoras teaches the existence of twelve spheres, which are: the heaven of fixed stars, the seven planetary spheres (including sun and moon), the circles of fire, of air, and of water, and in the centre the earth. The other details clearly show Aristotelian influence.

[3] As Martin thinks (*Et. sur le Timée*, ii. 101 sqq.), and Gruppe (*D. Kosm. Syst. d. Griechen*, p. 48 sq.). According to their view, Pythagoras and the oldest Pythagoreans represented the earth as an immovable sphere in the centre of

the Pythagoreans of the fourth century that we find the doctrine of the earth's revolution on its axis,[1] which presupposes that the counter-earth and the central fire were abandoned as separate parts of the universe. It matters little whether they were absolutely suppressed, or the counter-earth regarded as the western hemisphere, and the central fire placed in the interior

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the universe. The doctrine of the central fire, and the revolution around this fire, was subsequently advanced, Gruppe believes, by Hippasus or some other predecessor of Philolaus, but at first without the counter-earth; it was only a corruption of this doctrine which inserted the counter-earth between the earth and the central fire. The groundlessness of these hypotheses, which Böckh has refuted (*l. c.* p. 89 sqq.) very effectually, is manifest when we examine from a critical point of view the evidence on which they are based. The doctrines which Gruppe takes for traces of true Pythagoreanism are rather indications of a period which was unable to place itself at the ancient Pythagorean standpoint. Lastly, when Röth (ii. a, 817 sq. b, 247 sq.) maintains that Pythagoras and his school understood, by the counter-earth, the hemisphere opposite to ours; that they placed the earth in the centre of the universe, and ascribed to it a movement around its axis—this assertion is not worthy of a refutation. It is now universally recognised that Copernicus and others were wrong in attributing to the Pythagoreans the doctrine of the rotation of the earth on its axis, and the revolution of the earth round the sun. Vide Tiedemann (*Die ersten Philosophen Griechenlands*, p. 448 sq.; Böckh, *De Plat. Syst. Cœl. Globor.* p. xi. sq.; *Kl. Schrif.* iii. 272); *Philol.* 121 sq.; Martin, *Etudes*, &c. ii. 92 sq.

[1] According to Cic. *Acad.* ii. 39, 123, Theophrastus named as the author of that opinion the Syracusan Hicetas. Later on we find it in Ecphantus (Hippolyt. *Refut.* i. 15, p. 30; Plut. *Plac.* iii. 13, 3), and Heracleides (Part ii. a, 887, third edition). Martin, *l. c.* 101, 125, and Gruppe, *l. c.* 87 sqq., think we may attribute also to Hicetas the central fire and the planetary movement of the earth around that fire. Cf. however Böckh, *D. kosm. Syst.* Pl. 122 sqq. He shows that in the passage of Plutarch, *Plac.* iii. 9 (where, indeed, Eusebius, *Pr. Ev.* xv. 55, gives our actual text, but where Pseudo-Galen. *Hist. Phil.* 21, p. 293, does not mention the name of Hicetas), an error has probably crept in, by the omission of some words; and that the original text may have stood thus: Ἱκέτης ὁ Πυθαγόρειος μίαν, Φιλόλαος δὲ ὁ Πυθαγόρειος δύο, etc. Tradition tells us nothing as to the date when Hicetas lived; but Böckh's conjecture (*l. c.* 126) that he was the teacher of Ecphantus and younger than Philolaus seems probable.

of the earth. To the same period may perhaps belong the theory that the comet is a separate planet;[1] this eighth planet might serve, when the counter-earth had been discarded, to maintain the number ten in regard to the heavenly bodies.[2] The conjecture may, however, have emanated from those who were ignorant of the system of the ten heavenly bodies and the counter-earth, or rejected it. There is no doubt that the Pythagoreans considered the shape of the earth to be spherical:[3] its position towards the central fire and the sun was such that it should turn its western hemisphere to the central fire.[1] At the same time, they did not overlook the inclination of the earth's orbit towards the sun's;[2] this was necessary in their cosmical system, not merely to explain the changes in the seasons, but because the earth would otherwise have every day prevented the light of the central fire from reaching the sun, by its passage between them. Solar eclipses were accounted for by the passing of the moon between the earth and sun; and lunar eclipses by the interposition of the earth or other heavenly bodies between the sun and moon.[3] The Pythagoreans held the sun and moon to

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[1] Arist. *Meteorol.* i. 6, 342 b, 29: *τῶν δ' Ἰταλικῶν τινες καὶ καλουμένων Πυθαγορείων ἕνα λέγουσιν αὐτὸν* (sc. *τὸν κομήτην*) *εἶναι τῶν πλανήτων ἀστέρων.* A similar opinion is said to have been expressed by Hippocrates of Chios (*circ.* 450), and his disciple, Æschylus. Also Alex. *in h. l.* (Arist. *Meteor* ed. Idel. i. 180); Plut. *Plac.* iii. 2, 1; Stob. *Ecl.* i. 576. These last added that others of the Pythagoreans regarded the comet merely as a luminous reflection. Olympiodorus (p. 183, Idel.) transfers to Pythagoras himself what Aristotle says of 'some Pythagoreans.' The Scholiast *ad Arat. Diosem.* 359 (ap. Idel. *l. c.* p. 380 sq.), doubtless through an error, gives a general application to the text relative to the Pythagoreans, and counts Hippocratus among the philosophers of that school; and it is probably in this sense that he is called, ap. Alex. *εἷς τῶν μαθηματικῶν*.

[2] The central fire might still preserve its significance, even if it were conceived as surrounded by the earth as by a hollow sphere.

[3] Böckh (*Kl. Schr.* iii. 335 sq.) thinks that the Pythagoreans conceived the earth and the counter-earth as two hemispheres which, separated by a space more or less great, turn their plane sides towards each other. He has been led to this opinion merely by the presupposition (*l. c.* 329 sq.) that the Pythagoreans arrived at their doctrine of the counter-earth by the partition of the earth into two hemispheres. He afterwards admits that Aristotle had no idea of such an opinion, but represents the earth and the counter-earth of the Pythagoreans as two complete spheres. But there is no ground at all, in my judgment, for this supposition of Böckh as to the origin of the Pythagorean doctrine. If they once conceived the earth as a sphere, it was certainly more natural—in case a tenth heavenly body seemed necessary—to admit the counter-earth as a second sphere than to divide the earth itself into two hemispheres. The analogy of the other stars also makes it probable that the earth and the counter-earth were conceived as spheres, as well as the sun and moon. Lastly, if Aristotle has represented the matter thus, we can scarcely give the preference to any other testimony. Alex. (ap. Diog. viii. 25 sq.) says that the Pythagoreans regarded the earth as spherical, and inhabited in its

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circumference (which implies the idea of antipodes). Favorinus says (ap. Diog. viii. 48) that Pythagoras affirmed it to be round (στρογγύλη). But neither of these assertions should outweigh the evidence of Aristotle.

[1] Gruppe, *loc. cit.*, p. 65 sqq., thinks that the earth presented to the sun the northern hemisphere, and to the central fire the southern; he also thinks that the Pythagoreans regarded the side turned towards the central fire as the upper. But Böckh has completely refuted this hypothesis (*D. kosm. Syst. Pl.* 102 sqq; cf. *Kl. Schr.* iii. 329).

[2] Plut. *Plac* iii. 13, 2 (Galen, c. 14, 21): Φιλόλαος . . . κύκλῳ περιφέρεσθαι [τὴν γῆν] περὶ τὸ πῦρ κατὰ κύκλου λοξοῦ. *Ibid.* ii. 12, 2 (Stob. i. 502; Galen, c. 12): Πυθαγόρας πρῶτος ἐπινενοηκέναι λέγεται τὴν λόξωσιν τοῦ ζωδιακοῦ κύκλου, ἥντινα Οἰνοπίδης ὁ Χῖος ὡς ἰδίαν ἐπίνοιαν σφετερίζεται. Cf. c. 23, 6. According to others, Anaximander had already made this discovery (vide *supra*, p. 254, 3). According to Theo (*Astron.* p. 322 Mart. end; *Fragm.* ed. Spengel, p. 140), Eudemus attributed it to Œnopides — if we may read in the fragment λόξωσιν instead of διάζωσιν. The assertion of the *Placita*, that Eudemus had taken it from Pythagoras, would incline us to suppose (as Schäfer justly observes) that Eudemus had claimed it for himself (Schäfer, *Die Astron. Geographie der Griechen &c.*, *Gymn. progr.* Flensb. 1873, p. 17). In Diod. i. 98, some Egyptian sages assert that Œnopides had learned the inclination of the ecliptic in Egypt, which equally presupposes that he must have been the first to introduce it into Greece. In that case the Pythagoreans would have derived it from him. According to Proclus (*in Eucl.* 19, 66th *Fragm.*) Œnopides was a little younger than Anaxagoras, and a little older than Philolaus.

[3] On eclipses of the sun, vide Stob. i. 526; on those of the moon

be vitreous spheres,[1] which reflected back light and warmth to the earth.[2] At the same time we are told that they conceived the stars as resembling the earth, and surrounded like the earth by an atmosphere;[3]

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vide Arist. *De Cœlo*, ii. 13, 293 b, 21. He says, after speaking of the counter-earth: ἐνίοις δὲ δοκεῖ καὶ πλείω σώματα τοιαῦτα ἐνδέχεσθαι φέρεσθαι περὶ τὸ μέσον, ἡμῖν δὲ ἄδηλα διὰ τὴν ἐπιπρόσθησιν τῆς γῆς. διὸ καὶ τὰς τῆς σελήνης ἐκλείψεις πλείους ἢ τὰς τοῦ ἡλίου γίγνεσθαί φασιν· τῶν γὰρ φερομένων ἕκαστον ἀντιφράττειν αὐτήν, ἀλλ' οὐ μόνον τὴν γῆν. Similarly Stob. *Ecl.* i. 558 (*Plac.* ii. 29, 4; Galen, c. 15). Schäfer thinks he has discovered the reason of this opinion (*l. c.* p. 19), independently of the greater number of lunar eclipses, in the phenomenon mentioned by Pliny, *H. Nat.* ii. 13, 57, and the date of which we do not know. Pliny says that the moon was in eclipse at her setting, while the rising sun was already visible above the horizon, a phenomenon explicable by refraction. We find the same opinion in Anaxagoras, vide *infra*, vol. II.

[1] Vide p. 450, 1, and Plut. *Plac.* ii. 25, 7 (Stob. i. 552): Πυθαγόρας κατοπτροειδὲς σῶμα τῆς σελήνης. (Similarly Galen, c. 15.) As regards the form of the sun, the *Placita* (ap. Euseb. *Pr. Ev.* xv. 23, 7) describe it as a vitreous disc (δίσκος); but this description is not found in any other text, and expressly contradicts what is said in Stob. i. 526: οἱ Πυθ. σφαιροειδῆ τὸν ἥλιον. Moreover, the Pythagoreans must have attributed to the sun the same shape as to the moon, the spherical form of which is never disputed. We must, therefore, consider the statement of Eusebius as erroneous.

[2] Whence came light and heat to the sun and the moon? We have already discussed this question in regard to the sun (p. 450, 1). As to the moon there can be no doubt that her light was supposed to be derived, not directly from the central fire, but from the sun which, in the time of Philolaus, had long been regarded as the source of the moon's light. For if the moon had received her light from the central fire, she must always have been enlightened, since she presents the same side to the central fire as to the earth. Aristotle mentions also (vide *supra*, 455, 3) the opinion (incompatible with the assertion of Philolaus of ten heavenly bodies) that other bodies besides the earth cause eclipses of the moon. We cannot perceive in this, as Böckh does (*Philol.* 129) and Martin (*Etudes*, 99), an interposition of these small planets between the central fire and the moon, but the interposition of these planets between the sun and the moon. Why the moon is not enlightened by the central fire, or is enlightened too faintly to be visible to us without the light of the sun, is not explained by any document that we possess.

[3] Stob. i. 514: Ἡρακλείδης καὶ οἱ Πυθαγόρειοι ἕκαστον τῶν ἀστέρων κόσμον ὑπάρχειν γῆν περιέχοντα ἀέρα τε (Plut. *Plac.* ii. 13, 8; Galen, c. 13, add: καὶ αἰθέρα) ἐν τῷ ἀπείρῳ αἰθέρι· ταῦτα δὲ τὰ δόγματα

they attributed to the moon, plants and living beings far larger and fairer than those on the earth.[1] This theory was founded, it would seem, partly on the appearance of the moon's disc, which resembles the earth; and partly on the desire to discover a special abode for the souls who had quitted the earth, and for the dæmons.[2] Also they thought that the stars, which like the earth were planets, but which belonged to a better portion of the universe, must possess everything that serves to adorn the earth, in a more perfect manner. Of the planets, the order of which the Pythagoreans were the first to determine,[3] Mercury and Venus, the two which later astronomy places between the sun and the earth, were placed by them between the sun and Mars.[4] Pythagoras is said to

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ἐν τοῖς Ὀρφικοῖς φέρεται· κοσμοποιοῦσι γὰρ ἕκαστον τῶν ἀστέρων.

[1] Plut. *Plac.* ii. 30, 1 (Galen, c. 15): *οἱ Πυθαγόρειοι* (Stob. i. 562: *τῶν Πυθαγορείων τινὲς, ὧν ἐστι Φιλόλαος*) *γεώδη φαίνεσθαι τὴν σελήνην διὰ τὸ περιοικεῖσθαι αὐτὴν καθάπερ τὴν παρ' ἡμῖν γῆν, μείζοσι ζῴοις καὶ φυτοῖς καλλίοσιν· εἶναι γὰρ πεντεκαιδεκαπλασίονα τὰ ἐπ' αὐτῆς ζῷα τῇ δυνάμει μηδὲν περιττωματικὸν ἀποκρίνοντα καὶ τὴν ἡμέραν τοσαύτην τῷ μήκει.* Böckh (131 sq.) suspects with reason some error in the last statement. For if one terrestrial day corresponds with one revolution of the earth around the central fire, the moon, whose period of revolution is 29 times and a half greater, ought to have days as long as a terrestrial month—that is, in round numbers, 30 terrestrial days. The size and strength of the inhabitants correspond to the length of the day. But perhaps the expression may be inexact, and the author means to say that the duration of the day light is equal to 15 complete terrestrial days. In any case, however (as we have observed p. 317), the inaccuracy of our document proves nothing against the authenticity of the work of Philolaus.

[2] The first remark is to be found in the passage quoted in the previous note; the second notion comes from the Orphic poems, and the saying ascribed to Pythagoras by Iambl. *V. P.* 82: *τί ἐστιν αἱ μακάρων νῆσοι; ἥλιος, σελήνη.*

[3] Eudemus, ap. Simpl. *De Cœlo,* 212 a, 13; *Schol.* 497 a, 11.

[4] Cf. on this subject, besides the texts cited p. 444, 4; 420, 2, Plato, *Rep.* x. 616 E; *Tim.* 38 D; Theo *Astron.* c. 15, p. 180. Against these testimonies we have the following: Nicom. *Harm.* 6, 33 sq.; Plin. *Hist. Nat.* ii. 22, 84; Censorin.

have discovered that Venus is both the morning and the evening star.[1] The heaven of fixed stars, in common with the other heavenly bodies, revolves around the central fire;[2] but as its apparent diurnal revolution is interrupted by the movement of the earth, the Pythagoreans must have here conceived a far longer period of revolution, imperceptible in relation to the daily revolution of the earth: they seem however to have been led to this theory not by actual observations, but merely by dogmatic presuppositions on the nature of the stars.[3] They reckoned motion among the essential qualities of the heavenly bodies, and in the unchangeable regularity of their courses found the most obvious proof of the divinity of the stars, in which they believed, like most of the ancients.[4] According to the period of revolution attributed to the fixed stars, they seem to have determined the universal year,—a conception

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Di. Nat. 13, 3; Chalcid. *in Tim.* c. 71, p. 155 (197 Mull.), and other statements of more recent origin, which follow the order that was afterwards adopted. But these texts have as little authority as the verses of Alexander of Ephesus (contemporary of Cicero, as to whom cf. Martin, in his edition of Theo's Astronomy, p. 66 sq.; Meineke, *Anal. Alex.* 371 sq.; Müller, *Hist. Gr.* iii. 240); ap. Theo, *loc. cit.* (where they are wrongly attributed to Alexander the Ætolian); Chalcid. *loc. cit.* (who attributes them to Alexander of Miletus, the well-known Polyhistor); Heraclit. *Alleg. Hom.* c. 12. Alexander does not once mention the Pythagoreans.

[1] Diog. viii. 14; cf. ix. 23; Plin. ii. 8, 37.

[2] This certainly results from the evidence quoted p. 444, 4. Vide Böckh, *D. Kosm. Syst. Pl.* p. 99 sq. (as against Gruppe, l. c. 70 sqq.).

[3] The precession of the equinoxes, of which Böckh is thinking (*loc. cit.* p. 93, 99 sqq.; *Philol.* 118 sq.), was only discovered at a much later time by Hipparchus, as we find from other sources.

[4] Vide (besides Neo-Pythagorean writers, such as Onatas, ap. Stob. i. 96, 100; Ocellus, c. 2, and the Pseudo-Philolaus, ap. Stob. i. 422). Plato, who, especially in the *Phædrus*, 246 E sqq. (Böckh proves this, *Philol.* 105 sq. and most writers have agreed with him), has incontestably followed Pythagorean ideas; and Aristotle, *De An.* i. 2, 405 a, 29; cf. 455, 1, 3, 4; vide also *supra*, p. 444, 4.

which Plato no doubt borrowed from them.[1] At any rate it is closely connected in the Platonic philosophy with the doctrine of metempsychosis, in which he chiefly followed the Pythagoreans, and is also dominated by the number ten, in a manner so entirely Pythagorean, that the supposition has much in its favour.[2]

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[1] Vide part II. a 684, 4.

[2] We must, however, distinguish from this cosmical year the cycle of 59 years, in which were 21 intercalary months—that is to say, the great year invented by Philolaus, or even as some say, by Pythagoras, in order to make the solar and lunar months coincide. Plut. *Plac.* ii. 32; Stob. i. 264; Censorin. *Di. Nat.* 18, 8; vide for further details, Böckh, *Philol.* 133 sqq. The revolution of Saturn was also called the great year; Phot. *Cod.* 249, p. 440 a, 20. According to Censorinus, *loc. cit.*, and 19, 2, Philolaus reckoned the duration of the solar year at 364 days and a half. Böckh thinks this incredible, because the year of 365 days had then long been known in Egypt, and he gives an explanation of the passage in Censorinus, which certainly does not remove all difficulties. Schaarschmidt, p. 57, naturally sees nothing in this theory but a proof of ignorance in the Pseudo-Philolaus. It seems to me by no means established that the Egyptian year was known to Philolaus, and still less, that he had such decisive reasons for maintaining the Egyptian reckoning that no considerations could have induced him to deviate from it. Such considerations might be found by a Pythagorean, who placed numbers and characteristic numerical parallelisms above all things, in this (cf. Böckh, p. 135); that the 29 and a half days of the lunar month give 59 half days—i.e., the same number as the 59 years of the cycle; that the 59 years and 21 months are equal to 729 months; and the 364½ days of the solar year are equal to 729 half days; lastly that 729 is the cube of 9 and the square of 27, or the first cube of an uneven number (hence the number 729 has for Plato also—*Rep.* ix. 587 E—an especial significance). However this may be, I am disposed to think (as Böckh does) that it is more likely that some Pythagorean of the fifth century, whether from his imperfect knowledge or other causes, may have reckoned the year at 364½ days, than that a well-informed writer of the first or second century B.C., a time when the year of 365 days had become quite usual, should from ignorance have shortened this period by half a day. This seems to me so wholly improbable that if there were no means of connecting this computation of 364½ days with Philolaus (which I do not admit), I should be content with the following conjecture. Censorinus, or the author whom he follows, must have arrived at these 364½ days by a calculation founded on statements relative to the great year of Philolaus. These statements may have been altered through the fault of a copyist or in some other way; and Philolaus, in reality,

Compared with the ordinary notions of the ancients, this theory shows a remarkable progress in astronomy. For while they, presupposing that the earth was at rest, derived the changes of day and night and the seasons exclusively from the sun, an attempt was here first made to explain day and night, at any rate, by the motion of the earth; and though the true explanation, the revolution of the earth on its axis, was not as yet discovered, yet the Pythagorean doctrine in its immediate astronomical result directly led up to this, and as soon as the phantastic ideas, which alone resulted from the speculative presuppositions of Pythagoreanism, had been given up, the counter-earth as western hemisphere necessarily merged into the earth; the central fire was transferred to the earth's centre, and the movement of the earth around the central fire was changed into a revolution on its own axis.[1]

The famous harmony of the spheres was a consequence of the movement of the heavenly bodies. For as every quickly moved body produces a tone, the Pythagoreans believed it must be the same with the heavenly bodies. They supposed the acuteness of these tones to be according to the rapidity of motion, and this again to be in proportion to the distance of the several planets, the intervals of the planets corresponded with the intervals of sounds in the octave. Thus they arrived at the theory that the heavenly bodies in their

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may have made 59 solar years equal to 59 lunar years, plus 22 months (instead of 21), and, therefore to 730 revolutions of the moon; in which case, if we take 29½ days for the revolution of the moon, we get for the year 365 days, as exactly as we get 364½, if we make 59 years equal to 729 months.

[1] As Böckh well observes, *Philol.* 123.

rotation produce a series of tones,[1] which together form an octave, or, which is the same thing, a harmony.[2] The fact that we do not hear these tones, they explained by saying that we are in the condition of people who live

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[1] Arist. *De Cælo*, ii. 9, sub init.: *φανερὸν δ' ἐκ τούτων, ὅτι καὶ τὸ φάναι γίνεσθαι φερομένων [τῶν ἄστρων] ἁρμονίαν, ὡς συμφώνων γινομένων τῶν ψόφων, κομψῶς μὲν εἴρηται καὶ περιττῶς ὑπὸ τῶν εἰπόντων, οὐ μὴν οὕτως ἔχει τἀληθές. δοκεῖ γάρ τισιν*, and farther on, more precisely: *τοὺς Πυθαγορείους ἀναγκαῖον εἶναι, τηλικούτων φερομένων σωμάτων γίγνεσθαι ψόφον, ἐπεὶ καὶ τῶν παρ' ἡμῖν οὔτε τοὺς ὄγκους ἐχόντων ἴσους οὔτε τοιούτῳ τάχει φερομένων· ἡλίου δὲ καὶ σελήνης, ἔτι τε τοσούτων τὸ πλῆθος ἄστρων καὶ τὸ μέγεθος φερομένων τῷ τάχει τοιαύτην φορὰν, ἀδύνατον μὴ γίγνεσθαι ψόφον ἀμήχανόν τινα τὸ μέγεθος. ὑποθέμενοι δὲ ταῦτα καὶ τὰς ταχυτῆτας ἐκ τῶν ἀποστάσεων ἔχειν τοὺς τῶν συμφωνιῶν λόγους, ἐναρμόνιόν φασι γίνεσθαι τὴν φωνὴν φερομένων κύκλῳ τῶν ἄστρων.* Or, according to the commentary of Alexander (*Ad Metaph.* i. 5, p. 29, 6 Bon. 542 a, 5; cf. 31 Bon. 542 b, 7): *τῶν γὰρ σωμάτων τῶν περὶ τὸ μέσον φερομένων ἐν ἀναλογίᾳ τὰς ἀποστάσεις ἐχόντων . . . ποιούντων δὲ καὶ ψόφον ἐν τῷ κινεῖσθαι τῶν μὲν βραδυτέρων βαρὺν, τῶν δὲ ταχυτέρων ὀξὺν, τοὺς ψόφους τούτους κατὰ τὴν τῶν ἀποστάσεων ἀναλογίαν γινομένους ἐναρμόνιον τὸν ἐξ αὐτῶν ἦχον ποιεῖν. ἐπεὶ δ' ἄλογον ἐδόκει τὸ μὴ συνακούειν ἡμᾶς τῆς φωνῆς ταύτης, αἴτιον τούτου φασὶν εἶναι τὸ γενομένοις εὐθὺς ὑπάρχειν τὸν ψόφον, ὥστε μὴ διάδηλον εἶναι πρὸς τὴν ἐναντίαν σιγήν· πρὸς ἄλληλα γὰρ φωνῆς καὶ σιγῆς εἶναι τὴν διάγνωσιν, ὥστε καθάπερ τοῖς χαλκοτύποις διὰ συνήθειαν οὐθὲν δοκεῖ διαφέρειν, καὶ τοῖς ἀνθρώποις ταὐτὸ συμβαίνειν.* We shall presently find other proofs which, however, are hardly necessary, after this detailed explanation from our principal authority.

[2] It has already been observed (p. 385, 1, 2) that the Pythagoreans primarily understand by harmony the octave. It is also the octave which is in question in the harmony of the spheres. In the first place the name itself indicates this, and in the second the comparison of the planets with the seven strings of the ancient lyre was too obvious to be overlooked by the Pythagoreans. It is also clear, from the evidence of the ancients. In the passage just quoted from Aristotle, the words *λόγοι τῶν συμφωνιῶν* can scarcely mean anything else than the relations of the octave; for, according to Aristoxenus the Peripatetic (ii. 45) of the eight symphonies of which the later theory treats (Aristox. *Harm.* i. 20; Euclid. *Introd. Harm.* p. 12 sq.; Gaudentius, *Isag.* p. 12), the harmonists before his time only employed the first three, called the Diatessaron, Diapente, and Diapason (fourth, fifth, octave). Similarly in the verses of Alexander of Ephesus (mentioned *supra*, p. 457, 4), despite the musical errors in the further development of the thought, which Martin (Theo, *Astron.* 358 sq.) exposes, following Adrastus and Theo, the tones of the seven planets and their intervals correspond with those of the seven-stringed lyre. Moreover, Nicomachus (*Harm.* 6, 33 sq.), followed by Boethius (*Mus.* i. 20, 27), says expressly that the seven planets correspond exactly

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in their distances and their tones with the strings of the heptachord. In contrast with the ancient system (vide p. 457, 4) he places the sun in the centre; of the seven strings, the lowest, having at the same time the highest tone (νήτη), corresponds with the moon; the highest, but having the gravest tone (ὑπάτη), corresponds with Saturn. But Nicomachus does not forget to remark that his predecessors made the moon ὑπάτη (Alex. Ephes. *l. c.* says carelessly the Earth), and thence ascended to Saturn the νήτη; this is admitted by Alex. Aphr. among others (vide preceding note). From the same ancient source, as it appears, Aristides Quint. *Mus.* iii. 145, derives his explanation, τὸ διὰ πασῶν τὴν τῶν πλανητῶν ἐμμελῆ κίνησιν [προσσημαίνει], and it is likewise from ancient sources that Emmanuel Bryennius, *Harm.* (Oxon. 1699), Sect. i. 363, explains more particularly which of the planets corresponds with each of the seven strings as to tone, assigning the lowest tone to the moon, the highest to Saturn, the μέση to the sun. Cicero, or an ancient author whom he takes as guide (*Somn.* c. 5), is manifestly thinking of the heptachord and of the octave when he says of the eight celestial bodies endowed with motion, that two of them, Mercury and Venus, have the same tone; there are consequently in all, seven different sounds: *quod docti homines nervis imitati atque cantibus aperuere sibi reditum in hunc locum.* Only he makes the heaven of fixed stars take part in the music; to them he ascribes the highest sound, and the lowest to the moon. In Pliny, *Hist. Nat.* ii. 22, 84, Pythagoras determines, according to the same system, the distance of celestial bodies. The distance of the moon from the earth (reckoned by Pythagoras at 126,000 stadia according to c. 21), being taken as equivalent to one tone, that between the sun and moon is placed at 2½ tones, and that between the heaven of fixed stars and the sun at 3½: *ita septem tonos effici quam diapason harmoniam vocant.* No doubt this last is a misunderstanding; but a misunderstanding that might easily arise, if we reflect that the earth, being immovable, could not produce any sound; that consequently the real distance of the sonorous bodies answers exactly to that of the chords; for, from the moon to the sun is a fourth (the sun only takes this place in the new theory), from the sun to the heaven of fixed stars a fifth, and the eight sounds united form an octave of six tones. The other calculation (according to Plut. *De An. Procr.* 31, 9, 102, 8 sq., and Censorin. *Di. Nat.* c. 13), which reckons from the earth (placed as the προσλαμβανόμενος one tone lower than the ὑπάτη) to the sun three tones and a half, and from thence to the heaven of fixed stars, 2½—gives, it is true, the correct number of tones—six; but it omits the muteness of the earth (for we have nothing to do here with the theory of Philolaus of the movement of the earth), and it does not agree with the division of the octachord which requires a fifth, from the μέση to the νήτη. These authors, in a smith's forge; from our births we are unceasingly hearing the same sound, and so are never in a position to take note of its existence from the contrast of silence.[1]

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like Cicero and Pliny, make the fixed heaven, the ἀπλανές, participate in the celestial music. On the other hand, at the commencement of the chapter, Censorinus restricts it to the seven planets, which is correct. The contradiction of this with what he elsewhere says, is another proof that he is following an ancient source, the meaning of which he does not fully comprehend. According to Martin (*Etudes sur le Timée*, ii. 37), the sounds of the octave, being produced simultaneously, do not form a symphony. But the Pythagoreans did not allow their imaginations to be fettered, either by this difficulty or by others we have mentioned, and which are for the most part examined by Aristotle. Macrob. *Somn. Scip.* ii. 1, sub fin., reckons the extent of the celestial symphony at four octaves, and a fifth (departing from the system of harmonic numbers in the *Timæus*, ii. 37 by one tone only, vide part II. a, 653 sq.). Anatolius, ap. Iamblichum, *Theol. Arithm.* 56, distributing after his manner the tones among the celestial bodies, makes it two octaves and a tone. Plutarch, *l. c.* c. 32, quotes an opinion afterwards contested by Ptolemy (*Harm.* iii. 16), according to which the sounds of the seven planets answer to those of the seven invariable chords in the lyre of fifteen strings; then he quotes another opinion, according to which the distances of the planets would be analogous to the five tetrachords of the complete system. These ideas cannot possibly have belonged to the ancient Pythagoreans, for the development of the harmonic system and the augmentation of the number of chords which they presuppose, are of a later date. According to an opinion ascribed to Pythagoreans by Plutarch (*l. c.* 31), each of the ten celestial bodies, animated by movement, is separated from the body below it by a distance three times as great as the distance separating this from the next lowest. This opinion has nothing to do with the calculation of tones in the spheral harmony, and the same remark applies to what Plato says (*Rep.* x. 616 C sqq.; *Tim.* 36 D, 38 C sqq.) of the distances and velocity of the planets, though harmony is mentioned in the first of these passages. Among moderns, cf. on this question, first the classical essay of Böckh in the *Studien v. Daub und Creuzer*, iii. 87 sqq. (now *Kl. Schr.* iii. 169 sq.), where the correspondence of the celestial harmony with the distances of the heptachord is also explained in regard to the ancient system; and lastly, Martin, *Etudes*, ii. 37 sqq.

[1] This is the opinion of Aristotle and Heracleitus, *Alleg. Hom.* c. 12, p. 24 Mehl. The latter adds, as a possible reason, the great distance of the heavenly bodies. Simplicius, it is true, *De Cælo*, 211, a, 14; *Schol.* 496 b, 11 sqq. thinks this too ordinary a reason to be held by a school, the founder of which had himself heard the harmony of the spheres, and gives this sublimer reason (also indicated by Cicero, *Somn.* c. 5, together with that of Aristotle) that the

This notion of the spheral harmony had no connection originally with the system of the ten heavenly bodies,[1] but related only to the planets; for ten tones would have resulted from the motion of ten bodies; whereas seven sounds are required for harmony, according to the ancient harmonic system which is based on the heptachord; and eight, if the octachord be adopted. Now one or other of these numbers is always assigned to the harmony of the spheres by all who discuss it particularly.[2] The number must originally have been seven; for down to the time of Philolaus, the Pythagorean theory recognises only the seven notes of the heptachord.[3] The testimony of Aristotle[4] does not contradict this. It is possible, in the first place, that he had Plato or certain Platonists in his mind as

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music of the heavenly bodies is not perceptible to the ears of ordinary mortals. Porphyry expresses this idea in a physical manner (*in Ptol. Harm.* p. 257) when he says that our ears are too narrow to perceive these powerful sounds. Archytas seems to have anticipated him in this, vide the fragment quoted in Porph. l. c. and *supra*, p. 306 sq.

[1] Perhaps it is for this reason that Philolaus does not mention it (so far, at least, as we can discover from the fragments that remain of him). What Porph. *V. Pyth.* 31, placing himself at the point of view of the geocentric system, says of the nine sonorous celestial bodies, called by Pythagoras the nine muses, betrays a recent origin, if only by the un-Pythagorean interpretation of the ἀντίχθων.

[2] Cf. on this subject (besides what has been cited. p. 461, 2), Plato *Rep.* x. 616 sq., who refers the celestial harmony to the heaven of fixed stars and to the planets; Hippol. *Refut.* i. 2, p. 8, who refers it solely to the planets. Censorin. *Di. Nat.* c. 13: (*Pythag.*) *hunc omnem mundum enarmonion esse ostendit. Quare Dorylaus scripsit esse mundum organum Dei: alii addiderunt, esse id ἑπτάχορδον, quia septem sint vagas stellae, quae plurimum moveantur.*

[3] As Böckh shows, *Philol.* 70 sq., appealing to the passage of Philolaus quoted p. 385, 2. Arist. *Probl.* xix. 7; Plut. *Mus.* 19; Nicom. *Harm.* i. 17, ii. 27; cf. Boeth. *Mus.* i. 20. The assertion of Bryennius, *Harm.* sect. i. p. 365, that Pythagoras was the discoverer of the octachord cannot here be considered.

[4] Who, it is true, must be also thinking of the fixed stars when he uses the expression τοσούτων τὸ πλῆθος ἄστρων.

well as the Pythagoreans; and it is a question, in the second place, whether, supposing him to mean the Pythagoreans only, he simply reproduces their theory without any admixture of his own presuppositions. But the theory of the spheral harmony, though it primarily related to the planets alone, was based on a universal thought, the very thought that Aristotle attributes to the Pythagoreans (*Metaph.* 1, 5), viz., that the whole universe is a harmony. This thought directly resulted, as we have seen, from the perception or presentiment of a regular order in the distances and movements of the heavenly bodies: what the eye sees in observing the stars, that the ear hears in the concord of tones.[1] Engrossed with symbols, and little concerned with the precise discrimination of concepts, the Pythagoreans identified harmony with the octave; after this it was easy for them to regard the celestial harmony also as an octave, and the seven planets as the golden strings of the heavenly heptachord. This poetical thought doubtless came first; the intellectual arguments which, according to Aristotle, were brought forward to justify it are certainly posterior.

The chief function of the fire of the circumference, in the Pythagorean theory, was to hold the cosmos together as a covering embracing the whole, and on this account they seem to have called it necessity.[2] It is not improbable also that they derived the light of the stars from it, and in a certain degree that of the sun;[1] there are reasons too for supposing that they believed that this fire, or a radiation from it, was seen in the milky way.[2] Beyond the circle of fire lay the

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[1] Plato, *Rep.* vii. 430 D: *κινδυνεύει, ἔφην, ὡς πρὸς ἀστρονομίαν ὄμματα πέπηγεν, ὣς πρὸς ἐναρμόνιον φορὰν ὦτα πεπηγέναι, καὶ αὗται ἀλλήλων ἀδελφαί τινες αἱ ἐπιστῆμαι εἶναι, ὡς οἵ τε Πυθαγόρειοί φασι καὶ ἡμεῖς, ὦ Γλαύκων, συγχωροῦμεν.* Cf. Archytas ap. Porph. *in Ptolem. Harm.* p. 236 (*Fragm. Philos.* i. 564): *περί τε δὴ τᾶς τῶν ἄστρων ταχυτᾶτος καὶ ἐπιτολᾶν καὶ δύσιων παρέδωκαν ἁμῖν διάγνωσιν, καὶ περὶ γαμετρίας καὶ ἀριθμῶν καὶ οὐχ ἥκιστα περὶ μουσικῆς· ταῦτα γὰρ τὰ μαθήματα δοκοῦντι εἶμεν ἀδελφεά.*

[2] This appears to me to result

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from the mutilated passage ap. Plut. *Plac.* i. 25, 2 (Stob. i. 158; Galen. c. 10, p. 261; Theod. *Cur. Gr. Aff.* vi. 13, p. 87): Πυθαγόρας ἀνάγκην ἔφη περικεῖσθαι τῷ κόσμῳ. Ritter (*Pyth. Phil.* 183) finds in this passage the thought that the Unlimited in embracing the world transforms it to something limited, and subjects it to natural necessity. But according to the Pythagorean doctrine, the Unlimited cannot be conceived as that which embraces or limits; περαῖνον and ἄπειρον are diametrically opposed to each other. Similarly, the ἀνάγκη, by which Plato in the *Timæus* certainly means natural necessity as distinguished from the divine activity working to an end, cannot have had this signification with the Pythagoreans; for the idea of this opposition is, as we have seen (*supra*, p. 397), alien to them. Necessity seems rather to mean, with them, the bond of the universe; and when they say that it embraces the world, we think most naturally of the fire of the periphery. Plato seems to confirm this view when (*Rep.* x. 617 B), inspired with the Pythagorean spirit, he makes the spindle with the circles of the cosmos turn upon the knees of Ἀνάγκη, which consequently here embraces all the spheres alike. In the same manner Iambl. writes (*Th. Arithm.* p. 61): τὴν Ἀνάγκην οἱ θεολόγοι τῇ τοῦ παντὸς οὐρανοῦ ἐξωτάτῃ ἄντυγι (circle) ἐπηχοῦσι. Wendt. (*Jahrbuch f. wissensch. Krit.* 1828, 2, 379) regards Ἀνάγκη as synonymous with harmony. But although Diog. says (viii. 85) that, according to Philolaus all things take place ἀνάγκῃ καὶ ἁρμονίᾳ, we must not conclude from this that Philolaus identified necessity with harmony; for it could not be said of harmony that it envelopes the world.

[1] Vide p. 450, 1.

[2] This conjecture, which we already find in Böckh (*Philol.* 99), is founded upon the intimation which he also gives (*Kl. Schr.* iii. 297 sq.) that Plato, in speaking of the light which envelopes the world (*Rep.* x. 616 B sq.), as the ὑποζώματα of a ship, in all probability is thinking of the milky way. Of this light it is said that in its bosom the circles of heaven unite —and it is from these circles that the spindle of Ἀνάγκη proceeds, that spindle which (617 B) turns upon the knees of Ἀνάγκη. If we combine these passages with those quoted in the preceding note, it seems probable that the fire of the periphery, which, as the bond of the world, was called Ἀνάγκη, is the same as the milky way. With this passage of Plato we may also connect the statement ap. Stob. *Ecl.* i. 256: οἱ ἀπὸ Πυθαγόρου τὸν κόσμον σφαῖραν . . . μόνον δὲ τὸ ἀνώτατον πῦρ κωνοειδές. According to Böckh, Plato compares this light to a column, because the vertical cone of the milky way would appear so if seen from some particular point

Unlimited, or the unlimited air (*πνεῦμα*), from which the universe draws its breath.[1] That there must be

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outside the world. It is a question, however, whether the Pythagoreans did not rather believe that the fire of the periphery flamed up from the northern summit of the milky way, in a great column resting on a wide base and terminating in a point, and whether this opinion did not influence the exposition of Plato. I cannot agree with the alterations in the text proposed by Krohn (*D. Platon. Staat*, p. 282 sq.). This doctrine of the fire of the periphery, or at least of its identity with the milky way, seems to have been confined to a part of the school. For in what concerns the milky way, Aristotle, although the fire of the periphery was not unknown to him (vide *De Cœlo*, ii. 13; the words *τὸ δ' ἔσχατον καὶ τὸ μέσον πέρας*, cited p. 444, 4, evidently relate to this fire). quotes (*Metereol.* i. 8) from the Pythagorean school (*τῶν καλουμένων Πυθαγορείων τινὲς*) the opinion that the milky way is the trace or course of one of the stars that fell in the catastrophe of Phaeton; or else a course once traversed by the sun, but now abandoned. This opinion is also found in Olymp. and Philoponus *ad h. l.* (i. 198, 203, Id.), and in Stob. *Ecl.* i. 574 (Plut. *Plac.* iii. 1, 2), without any other indication of its source. Such opinions cannot be attributed to Philolaus.

[1] Arist. *Phys.* iii. 4, 203 a, 6: *οἱ μὲν Πυθαγόρειοι . . . εἶναι τὸ ἔξω τοῦ οὐρανοῦ ἄπειρον*. *Ibid.* iv. 6; vide *supra*, p. 414, 2; Stob. i. 380: *ἐν δὲ τῷ περὶ τῆς Πυθαγόρου φιλοσοφίας πρώτῳ γράφει* [*'Αριστοτέλης*], *τὸν οὐρανὸν εἶναι ἕνα, ἐπεισάγεσθαι δ' ἐκ τοῦ ἀπείρου χρόνον τε καὶ πνοὴν καὶ τὸ κενὸν, ὃ διορίζει ἑκάστων τὰς χώρας ἀεί*. Plut. *Plac.* ii. 9 (Galen. c. 11): *οἱ μὲν ἀπὸ Πυθαγόρου, ἐκτὸς εἶναι τοῦ κόσμου κενὸν* (cf. next note), *εἰς ὃ ἀναπνεῖ ὁ κόσμος καὶ ἐξ οὗ*. But, for the reason already given, p. 465, 2, we ought not to identify this Unlimited with the fire of the periphery, for it is nowhere described as being fiery, but as the boundless air (Arist. *supra*, p. 414, 2), from which the world inhales its *πνοή*. It is true that the passage in Simplicius, which will presently be cited, makes the heaven of fixed stars to be immediately bounded by the *ἄπειρον*; but it is a question whether Archytas understood by *ἔσχατον* the heaven of fixed stars, and not the outermost circle of fire. For the words *ἤγουν τῷ ἀπλανεῖ οὐρανῷ* are certainly a gloss of the historian; a Pythagorean would not have called the external part of the world *οὐρανός*. Röth thinks (ii. a, 831 sq.; b, 255) that by the *ἀπείρον* placed outside the world we should understand the primitive divinity as the infinite spirit. But this opinion is evidently erroneous, together with all that depends upon it—for the *ἄπειρον* as compared with the Limited is, from the Pythagorean point of view, something evil and imperfect; the *ἀνόητον καὶ ἄλογον* (Philol. ap. Stob. *Ecl.* i. 10). In the Pythagorean fragments, even the most recent, the word *ἄπειρος* is never applied to the Deity. If Aristotle speaks of the *ἄπειρον πνεῦμα* outside the world. this does not tell in favour of Röth's opinion, but against it. Does Aristotle, or any other philosopher anterior to the Stoics, ever call the spirit *πνεῦμα*?

an Infinite of this kind outside the world, Archytas had proved.[1] From it, time as well as the void had entered the world.[2] But this notion is exceedingly obscure and vague, for which, not only our authorities, but the Pythagoreans themselves are doubtless responsible. On the one hand, by the void we must understand empty space, which here, as often besides, is not distinguished from space filled with air; on the other hand, the void divides all things, even numbers, from each other. Thus two different meanings of the expression, the logical and the physical, are confused together; and with the same confusion of thought, time, on account of its successive infinity, is said to come from the Unlimited, that is, from infinite space. In this we see the fantastic method of the Pythagorean school, of which we have already had so many proofs. We have no right to attempt to destroy it by a precise definition of the concepts, nor to draw from it conclusions, which have no other certain warrant within the system.[1] For the same reason it ought not to surprise us that time, which, according to the above representation, entered the firmament from the Unlimited, should itself again be identified[2] with the celestial sphere; the former doctrine involves the concept of time as without limit; the latter asserts that the sky is by its motion the measure of time:[3] the perfect reconciliation of these two doctrines was doubtless not attempted by the Pythagoreans.[1]

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[1] Simpl. *Phys.* 108 a: Ἀρχύτας δέ, ὥς φησιν Εὔδημος, οὕτως ἠρώτα τὸν λόγον· ἐν τῷ ἐσχάτῳ ἤγουν τῷ ἀπλανεῖ οὐρανῷ γενόμενος, πότερον ἐκτείναιμι ἂν τὴν χεῖρα ἢ τὴν ῥάβδον εἰς τὸ ἔξω, ἢ οὐκ ἄν; τὸ μὲν οὖν μὴ ἐκτείνειν, ἄτοπον· εἰ δὲ ἐκτείνω, ἤτοι σῶμα ἢ τόπος τὸ ἐκτὸς ἔσται. διοίσει δὲ οὐδὲν, ὡς μαθησόμεθα. ἀεὶ οὖν βαδιεῖται τὸν αὐτὸν τρόπον ἐπὶ τὸ ἀεὶ λαμβανόμενον μέρος, καὶ ταὐτον ἐρωτήσει, καὶ εἰ ἀεὶ ἕτερον ἔσται, ἐφ' ὃ ἡ ῥάβδος, δηλονότι καὶ ἄπειρον. καὶ εἰ μὲν σῶμα, δέδεικται τὸ προκείμενον· εἰ δὲ τόπος, ἔστι δὲ τόπος τὸ ἐν ᾧ σῶμά ἐστιν ἢ δύναιτ' ἂν εἶναι, τὸ δὲ δυνάμει ὡς ὂν χρὴ τιθέναι ἐπὶ τῶν ἀϊδίων, καὶ οὕτως ἂν εἴη σῶμα ἄπειρον καὶ τόπος. The explanations of Eudemus are here added to the demonstration of Archytas, as is proved by the expressions βαδιεῖται and ἐρωτήσει, and the Aristotelian phrase (*Phys.* iii. 4. 203 b, 30; *Metaph.* ix. 8, 1050 a, 6): τὸ δυνάμει ὡς ὄν, &c., and as it is precisely on that phrase that the proof of the corporeal nature of the Unlimited rests, all relating to that idea must belong to Eudemus; the only thing which belongs to Archytas is the question: ἐν τῷ ἐσχάτῳ — οὐκ ἄν; We find another proof in favour of empty space in Arist. *Phys.* iv. 9, a statement reproduced and commented on by Themist. *in h. l.* 43 a (302 sq.); Simpl. *Phys.* 161 a; *De Cælo*, 267 a, 33. According to him, Xuthus said that without the Void, there could not be rarefaction or condensation, and that in order that there might be movement, some bodies must transcend the boundaries of the world, to make room for the bodies in motion. The world must overflow (κυμανεῖ τὸ ὅλον). Simplicius calls this Xuthus Ξοῦθος ὁ Πυθαγορικός. But it is not stated whether he was a true Pythagorean, or had merely (vide *infra*, p. 415), in the manner of Ecphantus, combined the theory of atoms with the Pythagorean doctrine.

[2] Arist. *Phys.* iv. 6; Stob. i. 380.

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[1] Cf. p. 411 sq.

[2] Plut. *Plac.* i. 21 (Stob. i. 248; Galen. c. 10, p. 25): *Πυθαγόρας τὸν χρόνον τὴν σφαῖραν τοῦ περιέχοντος* (Galen.: *τ. περιέχ. ἡμᾶς οὐρανοῦ*) *εἶναι*, a statement which is confirmed by Aristotle and Simplicius. For Aristotle says, *Phys.* iv. 10, 218 a, 33: *οἱ μὲν γὰρ τὴν τοῦ ὅλου κίνησιν εἶναί φασιν* [*τὸν χρόνον*], *οἱ δὲ τὴν σφαῖραν αὐτήν*, and Simplicius further remarks, p. 165: *οἱ μὲν τὴν τοῦ ὅλου κίνησιν καὶ περιφορὰν τὸν χρόνον εἶναί φασιν, ὡς τὸν Πλάτωνα νομίζουσιν ὅ τε Εὔδημος, κ. τ. λ., οἱ δὲ τὴν σφαῖραν αὐτὴν τοῦ οὐρανοῦ, ὡς τοὺς Πυθαγορικοὺς ἱστοροῦσι λέγειν οἱ παρακούσαντες ἴσως τοῦ Ἀρχύτου* (the categories falsely ascribed to Archytas; cf. Pt. iii. b, 113, 2 ed.) *λέγοντος καθόλου τὸν χρόνον διάστημα τῆς τοῦ παντὸς φύσεως*. In a similar manner, according to Plut. *De Is.* 32, p. 364; Clem. *Strom.* v. 571 B; Porph. *Vit. Pyth.* 41, the sea was spoken of by the Pythagoreans as the tears of Cronos. Cronos is the god of the sky whose tears (the rain) had, as they conceived, formed the sea, vide *supra*, p. 91, 2. I cannot recognise my opinion in the terms employed by Chaignet, ii. 171 sq., to reproduce the above remark. Nor can I discuss either his objections or his attempt to find the sense of the Pythagorean definition in Pseudo-Pythagorean writings.

[3] Arist. *l. c.*, gives another motive: *ἡ δὲ τοῦ ὅλου σφαῖρα ἔδοξε μὲν τοῖς εἰποῦσιν εἶναι ὁ χρόνος, ὅτι ἔν τε τῷ χρόνῳ πάντα ἐστὶ καὶ ἐν τῇ τοῦ ὅλου σφαίρᾳ*, and the definition attributed to Archytas in Simplicius may be interpreted in this sense. But this reason does not seem to have come from Archytas. I should rather conjecture it to have been given after his time. Cronos must at first have been with the Pythagoreans, as with Pherecydes, a symbolical name for the sky. Vide preceding note.

This theory necessitated the abandonment of the original view of the world as a surface vaulted over by a hemispherical cavity; and the conception of upper and lower was reduced to that of greater or lesser distance from the centre;[2] the lower, or that lying nearer to the centre, was called by the Pythagoreans the right side of the world; that which was farther from the centre, the left; for they regarded the movement of the heavenly bodies from west to east as a progressive motion, and accordingly they assigned to the centre, as befitted its importance in the universe, the place of honour on the right side of the bodies of the world.[1] They also held the upper portions of the universe to be the most perfect, and distinguished the outermost circle of fire from the circles of the stars, dividing these again into the circles above and below the moon; so that the universe was divided into three regions, Olympus, Cosmos, and Uranos.[2] Olympus contained the elements in their purity;[1] Cosmos[2] was the place of ordered and uniform motion, Uranos that of Becoming and Change.[3] Whether the central fire was included in Olympus and the heaven of fixed stars in Cosmos, we do not know; but both conjectures are probable: the position of the counter-earth is more doubtful; it is possible that the Pythagoreans, who were chiefly concerned with the opposition of the terrestrial and supra-terrestrial, never considered this question. Finally, in the extract of Stobæus a movement of Olympus is

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[1] I cannot regard them as accordant, nor can I agree with Böckh (*Philol.* 98) that the Pythagoreans called Time the sphere of the embracing, *so far* as it has its foundation in the Unlimited. For, on the one hand, the Unlimited could not be designated as *σφαῖρα τοῦ περιέχοντος*; and, on the other, this expression is otherwise explained in the passage of Aristotle hitherto overlooked. The indication of Plutarch (*Plat. Qu.* viii. 4, 3, p. 1007), according to which Pythagoras defined Time as the soul of the All or of Zeus, merits no reliance. Cf. p. 466 sq.

[2] This point, it is true, is not established by the testimony of Aristotle, *De Cœlo*, ii. 2, 285 a, 10. Aristotle, in considering the question whether the heavens have an above and a below, a right and a left, a before and a behind, finds it strange that the Pythagoreans *δύο μόνας ταύτας ἀρχὰς ἔλεγον, τὸ δεξιὸν καὶ τὸ ἀριστερὸν, τὰς δὲ τέτταρας παρέλιπον οὐθὲν ἧττον κυρίας οὔσας*. But this means to say that in the table of opposites, vide p. 381, these two categories alone are mentioned. In fact, however, the Above and the Below in the universe were reduced to the Exterior and the Interior. *Philol.* ap. Stob. *Ecl.* i. 360 (Böckh, *Philol.* 90 ff; *D. kosm. Syst.* 120 sq.): *ἀπὸ τοῦ μέσου τὰ ἄνω διὰ τῶν αὐτῶν τοῖς κάτω ἐστὶ, τὰ ἄνω τοῦ μέσου ὑπεναντίως κείμενα τοῖς κάτω* (i.e., the order of the spheres, from above to the centre, is the contrary of the order from the centre to the lowest point) *τοῖς γὰρ κάτω τὰ κατωτάτω μέσα ἐστὶν ὥσπερ τὰ ἀνωτάτω καὶ τὰ ἄλλα ὡσαύτως. πρὸς γὰρ τὸ μέσον ταὐτά ἐστιν ἑκάτερα, ὅσα μὴ μετενήνεκται* (= *πλὴν ὅτι μετεν.*; cf. Böckh, *Philol.* 90 sq.; *D. kosm. Syst.* 120 sq.). In the words *τοῖς γὰρ κάτω*, etc., the text is evidently corrupt. To correct it, I should propose, (1) either to strike out *μέσα*, which is only a conjecture for *μέγα*, and is entirely wanting in several manuscripts; so that the sense would then be: 'for to those who are on the under side, the lowest seems highest;' or else (2), to read *τοῖς γὰρ κάτω* (for those who inhabit the region of the world, which, according to the ordinary opinion is below, and which from our point of view is on the other side of the centre) *κατωτάτω τὰ μέσα ἐστὶν ὥσπερ τοῖς ἄνω, καὶ τὰ ἄλλα ὡσαύτως*. The corrections proposed by Leop. Schmidt, *Quæst. Epicharmeæ*, Bonn, 1846, p. 63, and by Nutzhorn (*Philol.* xxii. 1865, p. 337), seem to me not very happy.

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[1] Simpl. *De Cælo*, 175 b, 31; *Schol.* 492 b, 39: (οἱ Πυθαγόρειοι) ὡς αὐτὸς ἐν τῷ δευτέρῳ τῆς συναγωγῆς τῶν Πυθαγορικῶν ἱστορεῖ, τοῦ ὅλου οὐρανοῦ τὰ μὲν ἄνω λέγουσιν εἶναι τὰ δὲ κάτω, καὶ τὸ μὲν κάτω τοῦ οὐρανοῦ δεξιὸν εἶναι, τὸ δὲ ἄνω ἀριστερὸν, καὶ ἡμᾶς ἐν τῷ κάτω εἶναι. These words seem to contradict what Aristotle says, *De Cælo*, ii. 2, 285 b, 25: (οἱ Πυθαγ.) ἡμᾶς ἄνω τε ποιοῦσι καὶ ἐν τῷ δεξιῷ μέρει, τοὺς δ' ἐκεῖ κάτω καὶ ἐν τῷ ἀριστερῷ. Böckh, however (*d. kosm. Syst.* 106 sq.), has shown how the two assertions are compatible, and how the objections are to be met, which, according to Simplicius, *loc. cit.*, both he and his predecessor, Alexander, and more recently Gruppe, *d. kosm. Syst. d. Gr.* 65 sqq., brought forward. The mention of the συναγωγή, in Simplicius, relates to the division of the Universe into an upper or external, and a lower or internal region, the latter, including the earth and the counter-earth, is on the right. The statement of the treatise on the heavens, on the contrary, refers to the opposition of the superior and inferior hemispheres of the earth; in regard to this, the Pythagoreans maintain, in opposition to Aristotle, that our hemisphere is turned towards the periphery of the world, and is in ordinary language the superior hemisphere. Aristotle, *from his standpoint*, called it the right; the Pythagoreans must have called it the left.

[2] Vide preceding note and Stob. i. 488, the continuation of the text cited p. 444, 4: τὸ μὲν οὖν ἀνωτάτω μέρος τοῦ περιέχοντος, ἐν ᾧ τὴν εἰλικρίνειαν εἶναι τῶν στοιχείων Ὄλυμπον καλεῖ [Φιλόλαος]· τὰ δὲ ὑπὸ τὴν τοῦ Ὀλύμπου φορὰν, ἐν ᾧ τοὺς πέντε πλανήτας μεθ' ἡλίου καὶ σελήνης τετάχθαι, κόσμον, τὸ τ' ὑπὸ τούτοις ὑποσέληνόν τε καὶ περίγειον μέρος, ἐν ᾧ τὰ τῆς φιλομεταβόλου γενέσεως, οὐρανόν. καὶ περὶ μὲν τὰ τεταγμένα τῶν μετεώρων γίγνεσθαι τὴν σοφίαν περὶ δὲ τὰ γενόμενα τῆς ἀταξίας τὴν ἀρετὴν, τελείαν μὲν ἐκείνην, ἀτελῆ δὲ ταύτην. Cf. on this point Böckh, *Philol.* 94 sq., and *supra*, p. 316. The opposition of the terrestrial and celestial spheres appears also

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in the exposition (full of Stoical opinions) of Diog. viii. 26, and in the semi-peripatetic exposition, ap. Phot. 439 b, 27 sqq., but the tripartite division of Philolaus is here wanting. It is, on the contrary, implied in the Epinomis of Plato, 978 B, by the words: *ἐὰν γὰρ ἴῃ τις ἐπὶ θεωρίαν ὀρθὴν τὴν τοῦδε, εἴτε κόσμον εἴτε Ὄλυμπον εἴτε οὐρανὸν ἐν ἡδονῇ τῳ λέγειν*, precisely because the author discards it. Parmenides, v. 141, 137 (vide *infra*, *Parm.*), calls the outermost envelope, *ὄλυμπος ἔσχατος*; on the other hand, he calls the starry heaven, not *κόσμος*, but *οὐρανός*. We must not, however, infer from this, as Krische does (*Forsch.* 115), that Philolaus cannot have used the word *οὐρανός* in speaking of the lower region; his terminology is not necessarily always the same as that of Parmenides.

[1] That is to say it consisted of the purest substance; for the terrestrial elements evidently do not exist in Olympus; even the word *στοιχεῖα* is scarcely to be considered Pythagorean. Or are we to understand by this expression the Limited and Unlimited? For the Unlimited only, the *ἄπειρον* outside the world (vide p. 467, 1), of which Böckh is thinking, could not be designated by the plural *στοιχεῖα*.

[2] The Cosmos, that is, in the narrower sense of the word. For in general the word Cosmos has with the Pythagoreans its ordinary meaning of the universe (e.g. *Philol.* Fr. 1, cf. p. 379, 1). It is even said that Pythagoras was the first to use this expression (Plut. *Plac.* ii. 1; Stob. i. 450; Galen. c. 11; Phot. 440 a, 17). What is true in the statement is probably this, that the Pythagoreans were fond of employing the word to designate the harmonious order of the world. But even at the time of Xenophon it was not in general use, as is plain from Xen. *Mem.* i. 1, 11; *ὁ καλούμενος ὑπὸ τῶν σοφιστῶν κόσμος*, cf. Plato, *Gorgias*, 508 A.

[3] What Epiph. *Exp. fid.* p. 1087 B, says, using a later terminology, is not altogether inexact: *ἔλεγε δὲ (Πυθ.) τὰ ἀπὸ σελήνης κάτω παθητὰ εἶναι πάντα, τὰ δὲ ὑπεράνω τῆς σελήνης ἀπαθῆ εἶναι.*

spoken of, but it is uncertain whether he is not here transferring to Olympus what is applicable only to the heaven of fixed stars..

This astronomical theory of the universe is connected, as we have seen, with the idea of the respiration of the world and of its right and left sides. In this we see the favourite ancient comparison of the world with a living creature; but, after our previous enquiries concerning the world-soul, we cannot allow that this thought had any important influence on the Pythagorean system.

It might be inferred from a passage of the *Placita*[1] attributed to Plutarch, that the Pythagoreans, like Anaximander and Heracleitus, believed in the periodic generation and destruction of the world. This passage, however, probably asserts nothing more than that the vapours into which, by the effect of heat and moisture, earthly substances are resolved, serve for nourishment to the world or the stars.[2] It therefore relates only to the destruction of individual things: in regard to the universe generally, it would appear that the Pythagoreans did not believe in any destruction of the world; what the Pseudo-Plutarch[1] tells us on the subject is no doubt merely derived from Timæus the Locrian, or other similar sources. It is clear on the contrary, from Eudemus, that they thought, as the Stoics did afterwards, not only that the same persons who had lived in the world would re-enter it at a later period; but that they would again do the same actions and live in the same circumstances;[2] this is confirmed by a passage in Porphyry, not in itself of much weight.[3] This theory was no doubt connected with the doctrine of Transmigration and of the great year of the world: if the heavenly bodies were to occupy the same place as before, everything else would return to the same condition, and consequently the same persons would be present under the same circumstances. But it is a question whether this doctrine belonged to the whole school, or only to a portion of it.

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[1] II. 5, 3: *Φιλόλαος διττὴν εἶναι τὴν φθορὰν, τοτὲ μὲν ἐξ οὐρανοῦ πυρὸς ῥυέντος, τοτὲ δ' ἐξ ὕδατος σεληνιακοῦ περιστροφῇ τοῦ ἀέρος ἀποχυθέντος· καὶ τούτων εἶναι τὰς ἀναθυμιάσεις τροφὰς τοῦ κόσμου.* This statement, both here and in Galen. c. 11, is preceded by the words *πόθεν τρέφεται ὁ κόσμος.* Under the same title Stobæus says, Ecl. i. 452: *Φιλόλαος ἔφησε, τὸ μὲν ἐξ οὐρανοῦ πυρὸς ῥυέντος, τὸ δὲ ἐξ ὕδατος σεληνιακοῦ περιστροφῇ τοῦ ἀέρος ἀποχυθέντος εἶναι τὰς ἀναθυμιάσεις τροφὰς τοῦ κόσμου*, whereas in the chapter on Becoming and Perishing, i. 418, he cites the words *φιλόλ.—ἀποχυθέντος*, as they are cited in the *Placita*, only after *φθορὰν* he adds *τοῦ κόσμου.* As to the sense of the obscure words, which have perhaps been inexactly reported, I follow Böckh (*Philol.* 110 sq.), whose interpretation seems to me more probable than that of Chaignet, ii. 159. Chaignet explains the passage thus: *il y a deux causes de dépérissement, l'une quand le feu s'échappe du ciel, l'autre quand ce feu . . . se répand de l'eau de la lune.*

[2] As was said by Heracleitus and the Stoics.

The Pythagoreans appear to have occupied themselves very little with the study of terrestrial nature: at any rate, with the exception of one slight attempt on the part of Philolaus, tradition is silent on the subject.

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[1] *Plac.* ii. 4, 1 (Galen. c. 11, p. 265).

[2] In the fragment of his Physics ap. Simpl. *Phys.* 173 a, he enquires whether the same time which has been, shall be again, or not? and the answer is: that which comes after is only qualitatively the same as that which has gone before: Εἰ δέ τις πιστεύσειε τοῖς Πυθαγορείοις, ὡς πάλιν τὰ αὐτὰ ἀριθμῷ, κἀγὼ μυθολογήσω τὸ ῥαβδίον ἔχων ὑμῖν καθημένοις οὕτω (this is the right punctuation), καὶ τὰ ἄλλα πάντα ὁμοίως ἕξει, καὶ τὸν χρόνον εὔλογόν ἐστι τὸν αὐτὸν εἶναι.

[3] *V. Pyth.* 19. Of the doctrines of Pythagoras, those of immortality and the transmigration of souls are the best known: πρὸς δὲ τούτοις ὅτι κατὰ περιόδους τινὰς τὰ γενόμενά ποτε πάλιν γίνεται, νέον δ' οὐδὲν ἁπλῶς ἔστι.

In regard to Philolaus,[1] we are told that in the same way that he derived geometrical determinations (the point, the line, the surface, the solid) from the first four numbers, so he derived physical qualities[2] from five, the soul from six; reason, health, and light[3] from seven; love, friendship, prudence, and inventive faculty from eight. Herein (apart from the number schematism) is contained the thought that things represent a graduated scale of increasing perfection; but we hear nothing of any attempt to prove this in detail, or to seek out the characteristics proper to each particular region.[4]

Nor, in all probability, did the Pythagoreans carry their enquiries respecting the soul and man very far. Later writers indeed descant much on the origin of the soul from the world-soul, and on its ethereal, divinely-related, eternally-moved, immortal nature. There is even a fragment of Philolaus which contains these statements.[5] I have already shown,[6] however, that this fragment can scarcely be considered genuine, and that consequently the theory of his having devoted a special book of his work to the soul must remain doubtful; I have also shown that the other authorities are apt to intermingle the doctrines of the Stoics and Platonists with the Pythagorean tradition. If we consult our most trustworthy source, Aristotle, we find him to have been little acquainted with the Pythagorean psychology.[1] For in his comprehensive survey of all that his predecessors had taught on the nature of the soul, he simply says of the Pythagoreans that some of them held the solar corpuscles to be souls, and others that which sets them in motion.[2] The doctrine that the soul is a harmony, is alluded to by Aristotle, without mention of any name,[3] and in Plato[4] it is maintained by a pupil of Philolaus. Macrobius[5] ascribes it to Philolaus himself, and even to Pythagoras. Philoponus connects with it the statement also made by Stobæus, that the soul is a number.[1] This statement in itself is not at all improbable: if everything is number and harmony, the soul may well be so. But the general proposition that the soul is harmony or number, says nothing; we only get a specific determination concerning the essence of the soul, when it is described as by Plato and Aristotle (*loc. cit.*) as the number or harmony *of the body to which it belongs*. That it was so defined by the Pythagoreans we are never told, and such a view would ill accord with their belief in immortality;[2] if, therefore, it had been found within the school, it would have been a departure from the primitive doctrine which we cannot ascribe to Philolaus. It is more likely that he said what Claudianus Mamertus[3] quotes from him, and what may also be deduced from our previous citations,[4] that the soul is united with the body by means of number and harmony.[5] The further assertion, however,[6] that Pythagoras defined the soul as a self-moving number must absolutely be rejected. Aristotle, who was the first to quote this definition,[1] was evidently, when he did so, not referring to the Pythagoreans;[2] and other writers expressly mention Xenocrates as its author.[3] It is likewise improbable that Archytas defined the soul as the self-moved,[4] though the Pythagoreans would certainly appear to have noticed its continuous motion, and interrupted life;[5] and the statements that Pythagoras called it a square, and Archytas a circle or a sphere, are both equally questionable.[6] Lastly, an expression quoted from Archytas to the effect that the soul is not extended in space, is no doubt taken from a spurious work.[7]

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[1] Iambl. *Theol. Ar.* 56; cf. Asclep. in *Metaph.* i. 5. These passages have been quoted, p. 435, 2. In *Theol. Ar.* p. 34 sq., it is stated that six is regarded by the Pythagoreans as the number of the soul, and perhaps Aristotle may be already alluding to Philolaus when he speaks (*Metaph.* i. 5, quoted on p. 369, 1) of the assertion: *ὅτι τὸ τοιονδὶ* (sc. *ἀριθμῶν πάθος*) *ψυχὴ καὶ νοῦς.*

[2] *ποιότητα καὶ χρῶσιν.* The colour no doubt describes in a general manner the external nature (cf. Arist. *De sensu*, c. 3, 439 a, 30: *οἱ Πυθαγόρειοι τὴν ἐπιφάνειαν χροιὰν ἐκάλουν*), and *ποιότης*, which does not appear to belong to Philolaus, is a later interpretation of this expression.

[3] Τὸ *ὑπ' αὐτοῦ λεγόμενον φῶς*, therefore not light in the ordinary sense, but some quality or state of man; or in general, health, well-being.

[4] We find only an isolated trace of any discussions in regard to living beings in the passage, Arist. *De Sensu*, 5, 445 a, 16, according to which certain Pythagoreans supposed some animals lived upon odours. Vide *infra*, p. 480, 2, for other quotations.

[5] Cf. the texts cited, p. 447, 1.

[6] Vide pp. 447, sq.; 399, 1; 390, 1; 393, 3.

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[1] Vide *supra*, p. 447 sq.

[2] *De An.* i. 2, 404 a, 16, after having mentioned first of all the Atomists among those who considered the soul as the motive principle, and self-moved: *ἔοικε δὲ καὶ τὸ παρὰ τῶν Πυθαγορείων λεγόμενον τὴν αὐτὴν ἔχειν διάνοιαν· ἔφασαν γάρ τινες αὐτῶν ψυχὴν εἶναι τὰ ἐν τῷ ἀέρι ξύσματα, οἱ δὲ τὸ ταῦτα κινοῦν*, a conception which Aristotle (most likely it is merely his own conjecture) derives from the fact that the solar corpuscles move, even when the wind is perfectly still. I do not understand the censure which Schlottmann passes upon me (*D. Vergängliche u. Unvergängliche in d. menschl. Seele nach Arist.* Halle, 1873, p. 30). He says that I misinterpret this text, and the text cited, p. 448, in asserting that the definition of the soul as the moving principle is only an induction of Aristotle. But Aristotle himself gives this as his own induction: he only quotes, as belonging to the Pythagoreans, *ψυχὴν εἶναι τὸ ταῦτα κινοῦν*: It is not the same thing to say: the solar corpuscles are moved by a soul, and the soul is, generally, the moving principle.

[3] *De An.* i. 4, sub init.: *καὶ ἄλλη δέ τις δόξα παραδέδοται περὶ ψυχῆς . . . ἁρμονίαν γάρ τινα αὐτὴν λέγουσι· καὶ γὰρ τὴν ἁρμονίαν κρᾶσιν καὶ σύνθεσιν ἐναντίων εἶναι, καὶ τὸ σῶμα συγκεῖσθαι ἐξ ἐναντίων. Polit.* viii. 5 a: *διὸ πολλοί φασι τῶν σοφῶν οἱ μὲν ἁρμονίαν εἶναι τὴν ψυχήν, οἱ δ' ἔχειν ἁρμονίαν.*

[4] *Phædo*, 85 E sqq.

[5] *Somn.* i. 14: *Plato dixit animum essentiam se moventem, Xenocrates numerum se moventem, Aristoteles ἐντελέχειαν, Pythagoras et Philolaus harmoniam.*

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[1] Philop. *De An.* B, 15: *ὥσπερ οὖν ἁρμονίαν λέγοντες τὴν ψυχὴν [οἱ Πυθαγόρειοι] οὐ φασὶ ταύτην ἁρμονίαν τὴν ἐν ταῖς χορδαῖς*, etc. Cf. C, 5, where it is said that Xenocrates borrowed from Pythagoras the idea that the soul is a number. Stob. *Ecl.* i. 682: some Pythagoreans call the soul a number.

[2] In Plato, at any rate, Simmias only concludes from it that the soul perishes after the destruction of the body, as the harmony ceases after the destruction of the instrument; and it is difficult to say how this conclusion can be evaded; it was also drawn by Aristoxenus and Dicæarchus, cf. Part II. b, 717 sq. 2nd ed.

[3] *De Statu An.* ii. 7 (ap. Böckh, *Philol.* p. 177): '*Anima inditur corpori per numerum et immortalem eandemque incorporalem convenientiam.*'

[4] Vide *supra*, p. 475, 1; 431.

[5] Here again we are uncertain whether Claudian borrowed his statement from the true Philolaus; cf. p. 399, 1.

[6] Plut. *Plac.* iv. 2. Nemes. *Nat. hom.* p. 44. Theodoret, *Cur. gr. aff.* v. 72, with whom Steinhart, *Plato's Werke*, iv. 551, in the main agrees.

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[1] *De An.* i. 2, 4, 404 b, 27; 408 b, 32. *Anal. post.* ii. 4, 91 a, 37.

[2] For (*De An.* i. 2, 404 a, 20), he continues, after the text relative to the Pythagoreans, quoted p. 476, 2: *ἐπὶ ταὐτὸ δὲ φέρονται καὶ ὅσοι λέγουσι τὴν ψυχὴν τὸ αὑτὸ κινοῦν.* He distinguishes therefore this opinion from that of the Pythagoreans. As to the latter, he elsewhere expresses himself in a manner that would have been impossible if he had had before him so exact a definition of the nature of the soul.

[3] Cf. Part II. a, 672, 2, 2nd ed.

[4] Joh. Lyd. *De Mens.* 6 (8), S, 21: *ψυχὴ ἀνθρώπου, φησὶν ὁ Πυθαγόρας, ἐστὶ τετράγωνον εὐθυγώνιον. Ἀρχύτας δὲ ψυχῆς τὸν ὅρον οὐκ ἐν τετραγώνῳ ἀλλ' ἐν κύκλῳ ἀποδίδωσι διὰ τοῦτο· ʻψυχὰ τὸ αὐτὸ* [l. *αὑτὸ*] *κινοῦν, ἀνάγκα δὲ τὸ πρῶτον κινοῦν, κύκλος δὲ τοῦτο ἢ σφαῖρα.ʼ* According to the remark we have just made, Aristotle can have known nothing of this definition attributed to Archytas. The definition of the soul as *αὑτὸ κινοῦν* is certainly taken from Plato (*Phædrus*, 245 C). There too we find the observation that the self-moving is also in regard to other things *πηγὴ καὶ ἀρχὴ κινήσεως*; in regard to which the Pseudo-Archytas employs the Aristotelian expression *πρῶτον κινοῦν.*

[5] Vide the remark of Aristotle quoted p. 476, 2, and particularly what he says of Alcmæon, *infra.*

[6] The statement relative to Pythagoras is in itself suspicious, like all the recent information which we possess as to the personal opinions of this philosopher. The statement relative to Archytas is so, first, because it is in itself eccentric, and secondly, because it has an evident connection with Platonic and Aristotelian ideas.

[7] Claud. Mam. *De Statu An.* ii. 7 (cf. Pt. iii. b, 90, 2 Aufl.) quotes from Archytas: *Anima ad exemplum unius composita est, quae sic illocaliter dominatur in corpore, sicut unus in numeris.* But to

Concerning the parts of the soul, various theories are ascribed to the Pythagoreans by more recent writers which I cannot admit them to have originally held. According to some, they were acquainted with the Platonic distinction of a rational and an irrational soul, and the analogous distinction of Reason, Courage, and Desire;[1] together with the Platonic division of the intellectual faculty into *νοῦς, ἐπιστήμη, δόξα,* and *αἴσθησις*;[2] we are told by another writer[3] that they divided the soul into Reason, Mind, and Courage (*νοῦς, φρένες, θυμὸς*); Reason and Courage being in men and

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prove the authenticity of the writing from which this passage is taken, more evidence is required than the testimony of Claudian; it is not in itself probable that Archytas, or any other Pythagorean, should have enunciated a doctrine of which we first hear, not even from Plato, but from Aristotle, viz., that the presence of the soul in the body is not a juxtaposition in space. The statement ap. Stob. *Ecl.* i. 790; Theodor. *Cur. gr. aff.* v. p. 128, according to which Pythagoras makes *νοῦς θύραθεν εἰσκρίνεσθαι*, contains no doubt an inference drawn from the doctrine of Metempsychosis. Schlottmann (p. 24 sq. and the treatise cited p. 476) has wrongly made use of it to prove the improbable and unfounded conjecture, that Aristotle borrowed the expression *θύραθεν εἰσιέναι* in respect to the union of the soul with the body from the Pythagoreans.

[1] Cf. Posidonius ap. Galen. *De Hipp. et Plat.* iv. 7; v. 6, T. xv. 425. 478 K.; Iambl. ap. Stob. *Ecl.* i. 878; Plut. *Plac.* iv. 4, 1, 5, 13. On the distinction of the rational and irrational part, cf. Cicero, *Tusc.* iv. 5, 10; Plut. *Plac.* iv. 7, 4; Galen. *Hist. Phil.* c. 28. Other passages taken from Pseudo-Pythagorean fragments will be found in Part III. b, 112, 2, 2nd edition.

[2] The Pseudo-Archytas ap Stob. *Ecl.* i. 722, 784, 790, and Iambl. *π. κοιν. μαθ. ἐπιστ.* (in Villoison, *Anecd.* ii.) p. 199; Brontinus ap. Iamb. *C. C.* 198; Theodoret, *Cur. gr. aff.* v. 197 Gaisf., who adds, as a fifth part, the Aristotelian *φρόνησις*. Plut. *Plac.* i. 3, 19 sq., in an extract from an exposition which is evidently Neo-Platonic, founded upon the celebrated Platonic propositions cited by Aristotle, *De An.* i. 2, 404 b, 21. Photius gives another and more recent division, p. 440 b. 27 sqq.; cf. Part III. b, 120, 8.

[3] Alex. Polyhistor ap. Diog. viii. 30. It has already been shown, pp. 393, 3; 447, 2. that this exposition is not authentic. The whole division is confused, and contains many Stoical definitions, for example, that the senses are emanations from the soul, that the soul is nourished by the blood, &c.

beasts, Mind in men only; Courage having its seat in the heart, the two other faculties in the brain. There is more warrant for supposing that Philolaus placed the seat of Reason in the brain; of life and sensation in the heart; of seed and germination in the navel; of generation in the sexual parts: in the first of these regions, he said, lay the germ of men; in the second, that of beasts; in the third, that of plants; in the fourth, that of all creatures.[1] With this, our knowledge of the philosophic anthropology of the Pythagoreans is exhausted. What we are further told concerning their anthropological theories belongs altogether to the sphere of religious dogmas, the importance of which in the Pythagorean system we have now to consider.[2]

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[1] Iambl. *Theol. Arithm.* 22: *τέσσαρες ἀρχαὶ τοῦ ζῴου τοῦ λογικοῦ, ὥσπερ καὶ Φιλόλαος ἐν τῷ περὶ φύσεως λέγει, ἐγκέφαλος, καρδία, ὀμφαλὸς, αἰδοῖον· κεφαλὰ μὲν νόω, καρδία δὲ ψυχᾶς καὶ αἰσθήσιος, ὀμφαλὸς δὲ ῥιζώσιος καὶ ἀναφύσιος τῶ πρώτω, αἰδοῖον δὲ σπέρματος καταβολᾶς τε καὶ γεννάσιος· ἐγκέφαλος δὲ τὰν ἀνθρώπω ἀρχὰν, καρδία δὲ τὰν ζῴω, ὀμφαλὸς δὲ τὰν φυτῶ, αἰδοῖον δὲ τὰν ξυναπάντων, πάντα γὰρ καὶ θάλλουσι καὶ βλαστάνουσιν.* By the word *πάντα* or *ξυνάπαντα* we must understand the three kinds of living beings, collectively, i.e., men, beasts, and plants. On the authenticity of the fragment (which commences with the words *κεφαλὰ μὲν νόω*; what goes before is a preliminary remark of Iamblichus), cf. p. 317.

[2] We can only discuss in a supplementary manner certain theories which have been omitted in the preceding exposition as not forming an integral part of the physical system of the Pythagoreans, but which were either incorporated by later writers from other sources into their own doctrine, or stand isolated without philosophical foundation, and are based merely on observation. We should regard as an addition of later writers, for example, the story given by Alex. Polyhistor ap. Diog. viii. 25 sqq. vide Part III. b, 74 sq., 2nd ed. The same may be said of the Stoic definition of the body (*τὸ οἷόν τε παθεῖν ἢ διαθεῖναι*) attributed to Pythagoras by Sextus, *Math.* ix. 366. The *Placita* ascribed to him the Stoic doctrine: *τρεπτὴν καὶ ἀλλοιωτὴν καὶ μεταβλητὴν καὶ ῥευστὴν ὅλην δι' ὅλου τὴν ὕλην.* The same treatise i. 24, 3, gives, as coming from Pythagoras, a proposition which he could not have expressed in this form, viz. that on account of the variation and metamorphosis of the elements, a Becoming and

V. THE RELIGIOUS AND ETHICAL DOCTRINES OF THE PYTHAGOREANS.

Of all the Pythagorean doctrines, none is better known, and none can be traced with greater certainty to the founder of the school, than that of the Transmigration of souls. It is mentioned by Xenophanes,[1] and later by Io of Chios;[2] Philolaus speaks of it, Aristotle describes it as a Pythagorean fable,[3] and Plato unmistakably

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Perishing in the proper sense of the word is produced. Lastly, i. 23, 1 (*Stob.* i. 394), the *Placita* ascribe to Pythagoras a definition of movement posterior to Aristotle. We may also instance what is said about colours: *Placita*, i. 15, 2 (cf. Stob. i. 362; Anon. Phot. *Cod.* 249, p. 439 a, cf. Porph. *in Ptol. Harm.* c, 3, p. 213; Arist. *De Sensu*, c, 3, 439, a, 30); on the five zones of heaven and earth, *Plac.* ii. 12, 1; iii. 14 (Galen. *H. ph.* c. 12, 21, cf. Theo *in Arat.* ii. 359): on sight, and the reflections of the mirror, *Plac.* iv. 14, 3 (Stob. *Ecl.* i. 502, and in the extracts of Joh. Damasc. *Parall.* p. 1, 17, 15; Stob. *Floril. ed. Mein.* iv. 174; Galen, c. 21, p. 296); on the voice, *Plac.* iv. 20, 1 (G. c. 26); on seed, *Plac.* v. 3, 2, 4, 2, 5, 1 (G. c. 31); on the five senses, Stob. *Ecl.* i. 1104; Phot. l. c.; on the rainbow, Ælian, *V. H.* iv. 17; on the nutrition of animals by smell, Arist. *De Sensu*, 5 (vide *supra*, p. 475, 4); on the origin of maladies, Galen. c. 39. If even these notices really reproduce the doctrines of the ancient Pythagoreans (which can only be supposed in regard to a portion of them), they have no connection with the Pythagorean philosophy. Similarly the definitions of the calm of the air and of the sea, given by Arist. *Metaph.* viii. 2, ad fin., as those of Archytas, all of small importance; and the statement according to which (Arist. *Probl.* xvi. 9) this philosopher showed that the round form of certain organs in animals and plants was the result of the law of equality which governs natural movement, stands entirely alone. As to the pretended logic and philosophy of language of the Pythagoreans, vide *infra*, § vi.

[1] In the verses quoted Diog. viii. 36:

καί ποτέ μιν στυφελιζομένου σκύλακος παριόντα
φασὶν ἐποικτεῖραι καὶ τόδε φάσθαι ἔπος·
παῦσαι μηδὲ ῥάπιζ᾽ ἐπειὴ φίλου ἀνέρος ἐστὶ
ψυχή, τὴν ἔγνων φθεγξαμένης ἀΐων.

[2] In Diog. i. 120, where the words, *εἴπερ Πυθαγόρης ἐτύμως ὁ σοφὸς περὶ πάντων ἀνθρώπων γνώμας εἶδε καὶ ἐξέμαθεν*, refer to the belief in immortality.

[3] *De An.* i. 3, ad fin.: *ὥσπερ*

copied his mythical descriptions of the condition of the soul after death from the Pythagoreans. As Philolaus says,[1] and Plato repeats,[2] the soul is confined in the body and buried in it, as a punishment for faults. The body is a prison in which it has been placed by God as a penalty, and from which it consequently has no right

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ἐνδεχόμενον κατὰ τοὺς Πυθαγορικοὺς μύθους τὴν τυχοῦσαν ψυχὴν εἰς τὸ τυχὸν ἐνδύεσθαι σῶμα.

[1] Clemens, *Strom.* iii. 433 A; Theod. *Cur. gr. aff.* v. 14 (Böckh, *Philol.* 181): *μαρτυρέονται δὲ καὶ οἱ παλαιοὶ θεολόγοι τε καὶ μάντιες. ὡς διά τινας τιμωρίας ἁ ψυχὰ τῷ σώματι συνέζευκται καὶ καθάπερ ἐν σάματι τούτῳ τέθαπται.* The veins are called, ap. Diog. viii. 31, the bonds of the soul. The rest does not seem to belong to the ancient Pythagoreans.

[2] *Gorg.* 493 A: *ὅπερ ἤδη του ἔγωγε καὶ ἤκουσα τῶν σοφῶν, ὡς νῦν ἡμεῖς τέθναμεν καὶ τὸ μὲν σῶμά ἐστιν ἡμῖν σῆμα, τῆς δὲ ψυχῆς τοῦτο ἐν ᾧ ἐπιθυμίαι εἰσὶ τυγχάνει ὂν οἷον ἀναπείθεσθαι καὶ μεταπίπτειν ἄνω κάτω. καὶ τοῦτο ἄρα τις μυθολογῶν κομψὸς ἀνήρ, ἴσως Σικελός τις ἢ Ἰταλικὸς, παράγων τῷ ὀνόματι διὰ τὸ πιθανόν τε καὶ πειστικὸν ὠνόμασε πίθον, τοὺς δὲ ἀνοήτους ἀμυήτους τῶν δ' ἀμυήτων . . . ὡς τετρημένος εἴη πίθος . . . καὶ φοροῖεν εἰς τὸν τετρημένον πίθον ὕδωρ ἑτέρῳ τοιούτῳ τετρημένῳ κοσκίνῳ.* It is a question whether in this text it is merely the comparison of the *σῶμα* with the *σῆμα*, and the mythus of the punishment of the *ἀμύητοι*, that comes from Philolaus or some Pythagorean, or whether the moral interpretation of this myth also comes from him. This interpretation is attributed to Philolaus by Böckh (*Philol.* 183, 186 sq.); Brandis (*Gr. Röm. Phil.* i. 497): Susemihl (*Genet. Entw. d. Plat. Phil.* i. 107 sq.), and others. Brandis is less positive in the *Gesch. d. Entw.* i. 187. The interpretation, as a whole, seems to me to have a purely Platonic character, and to be out of harmony with the treatise of Philolaus. Plato does not say that he borrowed from the *κομψὸς ἀνὴρ* the interpretation of the myth, but the myth itself. When, connecting this myth with a popular song, *Σικελὸς κομψὸς ἀνὴρ ποτὶ τὰν ματέρα ἔφα*, Timocreon, *Fr.* 6 b; Bergk, *Lyr. Gr.* p. 941, he makes a mythus, *Σικελὸς ἢ Ἰταλικὸς*; he means to say that the myth of the perforated vessel into which the unconsecrated were to put water with a sieve—i.e., the tradition which extends the punishment of the Danaids to all the profane—belongs to the Orphico-Pythagorean cycle. In the Cratylus, 400 B, Plato refers for the comparison of *σῶμα* with *σῆμα* to the Orphics, whom Philolaus also had in view: *καὶ γὰρ σῆμά τινές φασιν αὐτὸ [τὸ σῶμα] εἶναι τῆς ψυχῆς, ὡς τεθαμμένης ἐν τῷ νῦν παρόντι . . . δοκοῦσι μέντοι μοι μάλιστα θέσθαι οἱ ἀμφὶ Ὀρφέα τοῦτο τὸ ὄνομα, ὡς δίκην διδούσης τῆς ψυχῆς ὧν δὴ ἕνεκα δίδωσι τοῦτον δὲ περίβολον ἔχειν, ἵνα σώζηται, δεσμωτηρίου εἰκόνα.*

to free itself by a presumptuous act.[1] So long as the soul is in the body it requires the body; for through the body alone can it feel and perceive; separated from the body it leads an incorporeal life in a higher world.[2] This, however, is of course only the case when it has rendered itself capable and worthy of such happiness; otherwise it can but look forward to the penance of material life, or the torments of Tartarus.[3] The Pythagorean doctrine was therefore, according to these the most ancient authorities, essentially the same that we afterwards find associated with other Pythagorean notions, in Plato;[4] and which is maintained by Empedocles,[5] viz., that the soul on account of previous transgressions is sent into the body, and that after death each soul, according to its deserts, enters the Cosmos or Tar-

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[1] Plato, *Crat.* l. c.; Id. *Phædo*, 62 B (after having remarked that Philolaus forbade suicide): *ὁ μὲν οὖν ἐν ἀποῤῥήτοις λεγόμενος περὶ αὐτῶν λόγος, ὡς ἔν τινι φρουρᾷ ἐσμεν οἱ ἄνθρωποι καὶ οὐ δεῖ δὴ ἑαυτὸν ἐκ ταύτης λύειν οὐδ' ἀποδιδράσκειν*, which Cic. (*Cato*, 20, 73; *Somn. Scip.* c. 3) reproduces rather inaccurately, without, however, having any other authority than this passage. Clearchus (ap. Athen. iv. 157 c) attributes the same doctrine to an unknown Pythagorean named Euxitheus.

[2] Philol. ap. Claudian. *De Statu An.* ii. 7: *diligitur corpus ab anima, quia sine eo non potest uti sensibus: a quo postquam morte deducta est agit in mundo* (*κόσμος* as distinguished from *οὐρανὸς*, *sup.* p. 471, 2) *incorporalem vitam. Carm. Aur.* v. 70 sq.: *ἢν δ' ἀπολείψας σῶμα ἐς αἰθέρ' ἐλεύθερον ἔλθῃς, ἔσσεαι ἀθάνατος θεὸς ἄμβροτος, οὐκέτι θνητός.* Perhaps this is the origin of the statement of Epiphanius (*Exp. fid.* 1807), according to which Pythagoras called himself a god.

[3] Euxitheus, ap. Athen, *l. c.*, threatens those who commit suicide: *διείπασθαι τὸν θεόν, ὡς εἰ μὴ μενοῦσιν ἐπὶ τούτοις, ἕως ἂν ἑκὼν αὐτοὺς λύσῃ, πλέοσι καὶ μείζοσιν ἐμπεσοῦνται τότε λύμαις*, and according to Arist. *Anal. Post.* ii. 11, 94 b, 32, Pythagoras thought that thunder frightened sinners in Tartarus. For I agree with Ritter (*Gesch. d. Phil.* i. 425) that if the parallel passage, in Plato, *Rep.* x. 615 D. f. be duly considered, we must suppose that the sinners, and not the Titans, are here meant.

[4] Cf, Part II. a, 691, 3rd ed.

[5] Vide *infra*, vol. ii. *Emped.*

tarus, or is destined to fresh wanderings through human or animal forms.[1] When, therefore, we meet with such a representation of the doctrine, among recent writers,[2] we have every reason to accept it[3] as true, without on that account admitting all that they combine with it.[4] The souls, we are told, after departing from the body, float about in the air;[5] and this no doubt is the foundation of the opinion quoted above, that the solar corpuscles are souls;[6] an opinion which must not be regarded as a philosophic doctrine,[1] but simply as a Pythagorean superstition.[2] The belief in subterranean abodes of the departed was undoubtedly maintained by the Pythagoreans.[3] What was their precise conception of the future state, whether like Plato they supposed that some of the souls underwent refining punishments in Hades, and that a definite interval must elapse between the departure from one body and the entrance into another; whether they conceived the union of the soul with the body as conditioned by choice, or by natural affinity, or only by the will of God, tradition does not say, and it is a question whether they had any fixed or

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[1] The Pythagoreans are said to have donominated this return into the body by the word παλιγγενεσία. Serv. *Aen.* iii. 68: *Pythagoras non* μετεμψύχωσιν *sed* παλιγγενεσίαν *esse dicit, h. e. redire* [*animam*] *post tempus.* Vgl. p. 474, 3.

[2] E. g. Alexander, who seems here to reproduce the Pythagorean ideas with less admixture than usual, ap. Diog. viii. 31: ἐκριφθεῖσαν δ' αὐτὴν [τὴν ψυχὴν] ἐπὶ γῆς πλάζεσθαι ὁμοίαν τῷ σώματι (cf. Plato, *Phædo*, 81 C; Iambl. *V. P.* 139, 148): τὸν δ' Ἑρμῆν ταμίαν εἶναι τῶν ψυχῶν καὶ διὰ τοῦτο πομπαῖον λέγεσθαι καὶ πυλαῖον καὶ χθόνιον, ἐπειδήπερ οὗτος εἰσπέμπει ἀπὸ τῶν σωμάτων τὰς ψυχὰς ἀπό τε γῆς καὶ ἐκ θαλάττης· καὶ ἄγεσθαι τὰς μὲν καθαρὰς ἐπὶ τὸν ὕψιστον, τὰς δ' ἀκαθάρτους μήτ' ἐκείνῳ πελάζειν μήτ' ἀλλήλαις, δεῖσθαι δ' ἐν ἀῤῥήκτοις δεσμοῖς ὑπ' Ἐριννύων. Porph. *V. P.* 19: πρῶτον μὲν ἀθάνατον εἶναί φησι τὴν ψυχὴν, εἶτα μεταβάλλουσαν εἰς ἄλλα γένη ζῴων. Porphyry, it is true, adds: ὅτι πάντα τὰ γινόμενα ἔμψυχα ὁμογενῆ δεῖ νομίζειν. Plut. *Plac.* v. 20, 4 (Galen. c. 35) interprets this to mean that the souls of animals are indeed rational in themselves, but are incapable, on account of their bodies, of acting rationally. Plut. *Plac.* I. 4; Galen. c. 28; Theodoret, *Cur. gr. aff.* v. 123, represent only the rational part of the soul as existing after death; but these, like the assertions of the equality of the spirit in men and animals (Sext. *M.* ix. 127; vide *sup.* p. 417, 3) are subsequent inferences. The myths about the personal transmigration of Pythagoras have been noticed, p. 340, 1.

[3] Our exposition will likewise refute what Gladisch says (Noack's *Jahrb. f. Spek. Philos.* 1847, 692 sq.) to prove that Empedocles was the first philosopher who taught the doctrine of Metempsychosis.

[4] For instance, what is said about the prohibition to kill and eat animals (vide *sup.* p. 344, 3). Only we must not, like Gladisch, conclude that Pythagoras, therefore, could not have admitted the transmigration of souls. Plato and others admitted it, and yet ate meat. Empedocles does not forbid the eating of plants, although he held that human souls passed into plants.

[5] Alex. ap. Diog. *l. c.* Vide p. 484, 1; 487, 3.

[6] Ritter (*Gesch. d. Phil.* i. 442 R) cites in regard to this the passage

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in Apuleius *De Socr.* c. 20: Aristotle says that the Pythagoreans thought it strange for any one to pretend he had never seen a dæmon; but it seems to me that apparitions of the dead in human form are meant, which, according to Iamblichus, *V. P.* 139, 148, the Pythagoreans regarded as perfectly natural.

[1] As Krische does (*Forschungen*, &c. i. 83 sq.). He connects the texts above quoted with the ideas of the central fire and the world-soul by this hypothesis: that, according to the Pythagorean doctrine, the souls only of the gods proceeded directly from the world-soul or central fire, and the souls of men from the sun, heated by the central fire. I cannot accept this combination, for I do not admit that the world-soul was a conception of the ancient Pythagoreans. What is further added, that the souls were precipitated from the sun upon the earth, is not affirmed by any of our witnesses.

[2] This Pythagorean theory has great affinity with what Aristotle (*De An.* i. 5, 410 b, 27) calls a λόγος ἐν τοῖς ’Ορφικοῖς καλουμένοις ἔπεσι: τὴν ψυχὴν ἐκ τοῦ ὅλου εἰσιέναι ἀναπνεόντων, φερομένην ὑπὸ τῶν ἀνέμων. If the soul originally floats in the air, and enters the body of the newly-born with the first breath, it escapes equally from the body of the dying with the last; and if it does not ascend to a superior abode, or sink to an inferior place, it must float about in the air until it enters another body. This Orphic conception itself seems to be connected with an ancient popular belief: the invocation in use at Athens of the Tritopatores, or gods of the wind, to make marriages fruitful (Suid. τριτοπ.; cf. Lobeck. *Aglaoph.* 754), presupposes that the soul of the child was brought by the wind, cf. p. 73, 2.

[3] According to Ælian. *V. H.* iv. 17, Pythagoras derived earthquakes from the assemblies (σύνοδοι) of the dead.

complete theory at all on the subject. The doctrine that each soul returned to earthly life under the same circumstances as previously, once in each cosmical period, is more distinctly ascribed to them.[1]

Important as the belief in Transmigration undoubtedly was to the Pythagoreans,[2] it seems to have had little connection with their philosophy. Later writers seek the point of union in the thought that souls, as the effluence of the world-soul, are of a divine and therefore imperishable nature;[3] but this thought, as before remarked, can hardly be considered as belonging to the ancient Pythagoreans, since in all the accounts it is bound up with Stoical ideas and expressions, and neither Aristotle in his treatise on the soul, nor Plato in the *Phædo*, ever allude to it, though they both had many opportunities for so doing.[4] Apart from this theory it would be possible to conceive that the soul might have been regarded as an imperishable essence, because it was a number or harmony.[5] But as the same holds good of all things generally, it would involve no special prerogative of the soul above other essences. If, on the other hand, the soul was in a more precise manner conceived as the harmony of the body, all that could be inferred from this is what Simmias infers in the *Phædo*, that the soul must come to an end with the body of which it is the harmony.[1] It seems very doubtful, therefore, whether the doctrine of immortality and transmigration was scientifically connected by the Pythagoreans with their theories of the essential nature of the soul, or with their number-theory. The ethical importance of this doctrine is undeniable. But ethics, as we shall presently see, was equally neglected by them, so far as any scientific treatment is concerned. This dogma appears therefore to have been, not an element of the Pythagorean *philosophy*, but a tradition of the Pythagorean *mysteries*, originating probably from more ancient orphic traditions,[2] and having no scientific connection with the philosophic principle of the Pythagoreans.

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[1] Cf. p. 474 sq.

[2] Schleiermacher's notion (*Gesch. d. Phil.* 58) that we ought not to take this literally, but as an ethical allegory of our affinity with the animal kingdom, is contrary to all historical testimony, including that of Philolaus, Plato, and Aristotle.

[3] Vide *supra*, p. 475, 417 sq.

[4] As has been already shown in regard to Aristotle. As to the *Phædo*, it is very unlikely that Plato, who delighted in referring to Orphic and Pythagorean traditions (vide p. 61 C, 62 B, 69 C, 70 C), would, in expressing a thought so similar (79 B, 80 A), have entirely abstained from all allusion to the Pythagoreans if his doctrine of immortality had been taken from them.

[5] Vide *supra*, p. 477.

The belief in dæmons, to which the ancient Pythagoreans were much addicted,[3] must also be included among their mystic doctrines. As far as we know on the subject, they thought that dæmons were bodiless souls which dwell, some of them under the earth, and some in the air, and which from time to time appear to men;[1] but spirits of nature as well as the souls of the dead seem to have been called by this name.[2] The Pythagoreans derived revelations and soothsaying from the dæmons, and connected them with purifications and expiations:[3] the high estimation in which they held soothsaying is frequently attested.[4] To the class of dæmons belonged also the heroes,[5] but there appears to have been nothing particular in the worship accorded

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[1] Cf. p. 477, 2. Still less can we, with Hermann (*Gesch. d. Plato*, i. 684, 616), find proof in Ovid. (*Metam.* xv. 214 sq.), and in Plut. (*De ei*, c. p. 18), that the Pythagoreans based metempsychosis on the doctrine of the flux of all things, and especially on the change of form and substance of our bodies. Cf. Susemihl, *Genet. Entw. d. Plat. Phil.* i. 440

[2] Vide p. 67 sq.

[3] Already Philolaus, *Fr.* 18 (*supra*, p. 371, 2), seems to distinguish between dæmons and gods. So does Aristoxenus (ap. Stob. *Floril.* 79, 45), when he recommends that we should honour our parents as well as gods and dæmons. The Golden Poem (v. 1 sqq.) says in a more definite manner that we should honour the gods above all; after them the heroes and the subterranean dæmons (καταχθόνιοι δαίμονες, manes). Later writers, like Plutarch, *De Is.* 25, p. 360; *Placita*, i. 8, combine the Pythagorean doctrine with the doctrines of Plato and Xenocrates, but on this very account they cannot be considered trustworthy as regards Pythagoreanism. The testimony of Alexander *ap. Diog.* xiii. 32, touching dæmons and their influence on men seems to come from a more primitive source: εἶναί τε πάντα τὸν ἀέρα ψυχῶν ἔμπλεων· καὶ ταύτας δαίμονάς τε καὶ ἥρωας ὀνομάζεσθαι· καὶ ὑπὸ τούτων πέμπεσθαι ἀνθρώποις τούς τ' ὀνείρους καὶ τὰ σημεῖα νόσου τε καὶ ὑγιείας, καὶ οὐ μόνον ἀνθρώποις

ἀλλὰ καὶ προβάτοις καὶ τοῖς ἄλλοις κτήνεσιν· εἴς τε τούτους γίνεσθαι τούς τε καθαρμοὺς καὶ ἀποτροπιασμοὺς, μαντικήν τε πᾶσαν καὶ κλῄδονας καὶ τὰ ὅμοια. Cf. Ælian. iv. 17: *ὁ πολλάκις ἐμπίπτων τοῖς ὠσὶν ἦχος (Πυθαγ. ἔφασκεν) φωνὴ τῶν κρειττόνων.* How far the famous Platonic exposition, *Symp.* 202 E, is of Pythagorean origin, cannot be determined.

[1] Cf. preceding note and passages quoted, p. 483, 6.

[2] Cf. the assertion of Porphyry *V. P.* 41: *τὸν δ' ἐκ χαλκοῦ κρουομένου ἦχον φωνήν εἶναί τινος τῶν δαιμόνων ἐναπειλημμένην τῷ χαλκῷ*, an ancient and fantastic notion which reminds us of the opinion of Thales on the soul of the magnet.

[3] Aristoxenus ap. Stob. *Ecl.* i. 206: *περὶ δὲ τύχης τάδ' ἔφασκον· εἶναι μέντοι καὶ δαιμόνιον μέρος αὐτῆς, γενέσθαι γὰρ ἐπίπνοιάν τινα παρὰ τοῦ δαιμονίου τῶν ἀνθρώπων ἐνίοις ἐπὶ τὸ βέλτιον ἢ ἐπὶ τὸ χεῖρον.* Brandis (i. 496), in opposition to Böckh, *Philol.* 185, thinks that this higher influence is referred to by Philolaus ap. Arist. (*Eth. Eud.* 6, ad fin.), *εἶναί τινας λόγους κρείττους ἡμῶν.* Alex. (*l. c.*) attributes revelations and expiations to the dæmons and not to the *δαιμόνιον*; but the exclusiveness of this opinion seems to betray the stand-point of a later period, which would not admit any direct intercourse between gods and men. We find besides in Alex. a perceptible likeness to the text in the *Symposium* of Plato, 202 E.

[4] Vide *supra*, p. 349, 2. The greater number add that Pythagoras refused to allow the interrogation of victims (in Galen. *H. ph.* c. 30, p. 320, we should read according to the text of the *Plac.* v. 1, 3, *οὐκ ἐγκρίνει* instead of *μόνον τὸ θυτικὸν οὐκ ἀνῄρει*). But this opinion rests entirely on the supposition that he forbade bloody sacrifices, and in general the killing of animals, which has no foundation in history.

[5] Vide *supra*, p. 487, 3.

to them.[1] The opinion that dæmons occupied an intermediate place between gods and men[2] already existed in the more ancient popular faith.

If we turn from the dæmons to the gods, we find, as has already been observed,[3] that the Pythagoreans, in all probability, brought their theology into no scientific connection with their philosophical principle. That the conception of God as a religious idea was of the highest significance to them, is indubitable; nevertheless, apart from the untrustworthy statements of later writers, of which we have before spoken, very little has been handed down to us about their peculiar theological tenets. Philolaus says that everything is enclosed in the divinity as in a prison; he is also said to have called God the beginning of all things; and in a fragment the authenticity of which is not certain, he describes him in the manner of Xenophanes as the one, eternal, unchangeable, unmoved, self-consistent ruler of all things.[4] From this it is evident that he had advanced beyond the ordinary polytheism to that purer conception of Deity, which we not unfrequently meet with among philosophers and poets before his time. The story in the Pythagorean legend,[5] that Pythagoras when he went into Hades saw the souls of Homer and Hesiod undergoing severe torments for their sayings about the gods, is to the same effect. We cannot, however, lay much stress upon this, as the date of the story is unknown.

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[1] At any rate what Diog. (viii. 33) says is the general Greek opinion; vide Hermann, *Gr. Ant.* ii. sect. 29 k.

[2] Vide quotation from Aristotle, *supra*, p. 338, 3.

[3] Vide p. 387 sq.

[4] *Supra*, p. 402, 1.

[5] Hieronymus ap. Diog. viii. 21, vide *supra*, p. 340, 2.

Some other particulars are related of Pythagoras and his school,[1] which are still more uncertain, and the evidence of which collectively proves nothing more than we have already admitted, viz., that the Pythagoreans indeed purified and spiritualised the popular belief, and strongly insisted on the Unity of the Divine, but cannot be said to have consciously attempted to arrive at any philosophic theory of God. This purification, however, was not connected in their case, as in the case of Xenophanes, with a polemic against the popular religion; and though they may not have agreed with everything that Homer and Hesiod said about the gods, yet the popular religion as a whole formed the basis of their own theory of the world and of life; in this respect it is hardly necessary to refer particularly to their worship of Apollo, their connection with the Orphics, their predilection for religious symbolism,[2] and their myths about the lower world. Consequently, their theological opinions cannot, strictly speaking, be considered as part of their *philosophy.*

The religious belief of the Pythagoreans stood in close connection with their moral prescripts. Human life, they were convinced, was not only, like everything else, in a general manner under the Divine care and protection; but was also in a particular sense the road which leads to the purification of the soul, from which no one, therefore, has any right to depart of his own choice.[1] The essential problem of man's life, consequently, is his moral purification and perfection; and if during his earthly life, he is condemned to imperfect effort; if, instead of wisdom, virtue merely, or a struggle for wisdom, is possible,[2] the only inference is that in this struggle man cannot do without the support which the relation to the Deity offers to him. The Pythagorean ethical doctrine therefore has a thoroughly religious character: to follow God and to become like Him is its highest principle.[3] But it stands in no closer relation to their philosophy than their dogmatic doctrine does. It is of the greatest moment in practical life, but its scientific development is confined to the most elementary attempts. Almost the only thing we know about it, in this respect, is the definition, already quoted, of justice as a square number, or as *ἀντιπεπονθός*.[4] But that is only an arbitrary application of the method, which elsewhere prevailed in the Pythagorean school—that of defining the essence of a thing by an analogy of number; there is scarcely the most feeble germ of any scientific treatment of ethics. The author of the *Magna Moralia* says that Pythagoras attempted indeed a theory of virtue, but in so doing, did not arrive at the proper nature of ethical activity.[1] We must go farther and say that the stand-point of Pythagoreism in general was not that of scientific ethics. Nor can we argue much from the proposition[2] that Virtue consists in Harmony, for the same definition was applied by the Pythagoreans to all possible subjects; besides, the date of the proposition is quite uncertain.[3] Whether the moral tendency of the myths about the vessel of the Danaids, which we find in Plato, is really derived from Philolaus or any other Pythagorean is doubtful,[4] and if it is, no conclusion can be drawn from it. From all that tradition tells us, it is evident that ethics with the Pythagoreans, as with the other Pre-Socratic philosophers, never advanced beyond popular reflection; in regard to any more developed ethical conceptions, they are only to be found in the untrustworthy statements of more recent authors,[5] and in the fragments of writings which partly by their empty diffusiveness, and partly by their large use of later theories and expressions, betray their date too clearly to be worth noticing in this place.[1]

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[1] Such as the expression attributed to Pythagoras by Themist. (*Or.* xv. 192, b) εἰκόνα πρὸς θεὸν εἶναι ἀνθρώπους, with which the so-called Eurysus in the fragment ap. Clem. *Strom.* v. 559 D, agrees; or what we find in Stob. (*Ecl.* ii. 66), Iambl. (*V. P.* 137), Hierocles (*In Carm. Aur. Præf.* p. 417 b, M), on the destiny of man—to be as like God as possible. The formula ἕπου θεῷ is often quoted, without mention of Pythagoras, e.g., in Plut. *De Aud.* i. p. 37; Clem. *Strom.* ii. 390 D.

[2] Cf. the passages quoted, p. 421, 444, 4; 469, 2; also the statement ap. Clem. *Strom.* v. 571 B; Porph. *V. P.* 41 (after Aristotle), according to which the Pythagoreans called the planets the dogs of Persephone, the two Bears the hands of Rhea, the Pleiades the lyre of the Muses, the sea the tears of Cronos.

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[1] Vide *supra*, p. 483, 1; 402, 2.

[2] So Philolaus, *sup.* p. 471, 2. For the same reason, we are told, Pythagoras repudiated the name of sage, and called himself instead *φιλόσοφος*. Cic. *Tusc.* v. 3, 8; Diog. i. 12; viii. 8 (after Heraclides and Sosicrates); Iambl. 58, 159; Clemens, *Strom.* i. 300 C; cf. iv. 477 C; Valer. Max. viii. 7, 2; Plut. *Plac.* i. 3, 14; Ammon. *In qu. v. Porph.* 5, b.

[3] Vide *sup.* p. 490, 1. We find the same idea (according to the exact explanation given, ap. Phot. p. 439 a, 8), in the saying ascribed to Pythagoras, and quoted by Plut. *De Superst.* c. 9, p. 169; *Def. Orac.* c. 7, p. 413, that the best for us is to get near to the gods.

[4] Vide *sup.* 420, 2.

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[1] *M. Mor.* i. 1. 1182 a, 11: *πρῶτος μὲν οὖν ἐνεχείρησε Πυθαγόρας περὶ ἀρετῆς εἰπεῖν, οὐκ ὀρθῶς δέ· τὰς γὰρ ἀρετὰς εἰς τοὺς ἀριθμοὺς ἀνάγων οὐκ οἰκείαν τῶν ἀρετῶν τὴν θεωρίαν ἐποιεῖτο· οὐ γάρ ἐστιν ἡ δικαιοσύνη ἀριθμὸς ἰσάκις ἴσος.* The statement that Pythagoras was the first to speak of virtue seems to have arisen from the passage quoted, p. 420, 2, from *Metaph.* xiii. 4.

[2] Alexander, ap. Diog. viii. 33: *τήν τ' ἀρετὴν ἁρμονίαν εἶναι καὶ τὴν ὑγίειαν καὶ τὸ ἀγαθὸν ἅπαν καὶ τὸν θεόν.* Similarly in Iambl. 69, 229, Pythagoras demands that there should be friendship between the soul and the body, between reason and sense, etc.

[3] For the evidence, as we have shown, is untrustworthy, and the silence of Aristotle on the subject, though it is not decisive, makes it all the more doubtful.

[4] *Sup.* p. 482, 2.

[5] Among these we must reckon the assertion of Heracleides of Pontus (ap. Clem. *Strom.* ii. 417, A), that Pythagoras defined hap-

Of the remaining authorities on the ethics of the Pythagoreans, the statements of Aristoxenus merit the greatest attention. Though he may perhaps describe the principles of the school in his own forms of expression, and probably not without some admixture of his own thoughts, yet on the whole the picture which we get from him is one which agrees with historical probability, and with the statements of others. The Pythagoreans, according to Aristoxenus, required before all things adoration of the gods and of dæmons, and in the second place reverence to parents and to the laws of one's country, which ought not to be lightly exchanged for foreign laws.[2] They regarded lawlessness as the greatest evil; for without authority they believed the human race could not subsist. Rulers and the ruled should be united together by love; every citizen should have his special place assigned to him in the whole; boys and youths are to be educated for the state, adults and old men are to be active in its service.[3] Loyalty, fidelity, and long-suffering in friendship, subordination of the young to the old, gratitude to parents and benefactors are strictly enjoined.[4] There

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piness as *ἐπιστήμη τῆς τελειότητος τῶν ἀρετῶν* (al. *ἀριθμῶν*) *τῆς ψυχῆς*. Heyder (*Eth. Pyth. Vindic.* p. 17) should not, therefore, have appealed to this text.

[1] Vide Part III. b, 123 sqq., second edition.

[2] Ap. Stob. *Floril.* 79, 45. Similarly the *Golden Poem*, v. 1 sq.; Porph. *V. P.* 38; Diog. viii. 23; these latter, no doubt, after Aristoxenus.

[3] Ap. Stob. *Floril.* 43, 49.

[4] Iambl. *V. P.* 101 sqq. No doubt, after Aristotle, for these prescripts are repeatedly called *πυθαγορικαὶ ἀποφάσεις*.

must be a moderate number of children, but excess in sensual indulgence, and without marriage, is to be avoided.[1] He who possesses true love for the beautiful will not devote himself to outward show, but to moral activity and science;[2] conversely, science can only succeed when it is pursued with love and desire.[3] In many things man is dependent on Fortune, but in many he is himself the lord of his fate.[4] In the same spirit are the moral prescripts of the Golden Poem. Reverence towards the gods and to parents, loyalty to friends, justice and gentleness to all men, temperance, self-command, discretion, purity of life, resignation to fate, regular self-examination, prayer, observance of consecrating rites, abstinence from impure food,—such are the duties for the performance of which the Pythagorean book of precepts promises a happy lot after death. These, and similar virtues, Pythagoras is said to have enforced, in those parabolic maxims, of which so many specimens are given us,[5] but the origin of which is in individual instances as obscure as their meaning. He taught, as we are elsewhere informed,[6] reverence to parents and the aged, respect for the laws, faithfulness and disinterestedness in friendship, friendliness to all, moderation and decorum; commanded that the gods should be approached in pure garments and with a pure mind; that men should seldom swear, and never break their oaths, keep what is entrusted to them, avoid wanton desire, and not injure useful plants and animals. The long moral declamations which Iamblichus puts into his mouth, in many passages of his work,[1] for the most part carry out these thoughts: they are exhortations to piety, to the maintenance of right, morals and law, to moderation, to simplicity, to love of country, to respect to parents, to faithfulness in friendship and marriage, to a harmonious life, full of moral earnestness. Many more details of this kind might be added;[2] in almost every instance, however, the evidence is too uncertain to allow of any dependence upon it. But, according to the unanimous testimony

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[1] Ap. Stob. *Floril.* 43, 49, 101, 4, M; cf. the Pythagorean word quoted, ap. Arist. (*Œcon.* i. 4 sub init.), and the statement that Pythagoras persuaded the Crotoniats to send away their concubines. Iamb. 132.

[2] Stob. *Floril.* 5, 70.

[3] Aristox. in the extracts from Joh. Damasc. ii. 13, 119 (Stob. *Floril.* Ed. Mein. iv. 206).

[4] Stob. *Ecl.* ii. 206 sqq.

[5] Vide Diog. viii. 17 sq.; Porph. *V. P.* 42: Iambl. 105; Athen. x. 452 D; Plut. *De Educ. Puer.* 17, p. 12; *Qu. Conv.* viii. 7, 1, 3, 4, 5; and *supra*, p. 340, 4.

[6] Diog. viii. 23; Porph. *V. P.* 38 sq. These two texts, by their agreement, point to a common source, perhaps Aristoxenus, Diod. *Exc.* p. 555 Wess. In the same passage, Diog. 22 brings forward the prohibition of the oath, of bloody sacrifices; but this is certainly a later addition. As to the oath, Diodorus, *l. c.*, seems the more accurate. What Diog. says (viii. 9), following supposed writings of Pythagoras, as to the time of con-

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jugal intercourse, appears scarcely worthy of credit. The statement of Diog. 21 is more likely to have belonged to the ancient Pythagoreans.

[1] In great part following ancient writers, cf. with Iambl. 37–57; Porph. 18; Justin. *Hist.* xx. 4; and *supra*, p. 344, 4.

[2] E. g. the famous κοινὰ τὰ τῶν φίλων (*supra*, p. 345, 2); the saying that man should be one. ap. Clem. *Strom.* iv. 535 C; cf. Proclus *in Alcib.* iii. 72; Conv. *in Parm.* iv. 78, 112 (the end of life is, according to the Pythagoreans, the ἑνότης and φιλία); the exhortation to truthfulness, ap. Stob. *Floril.* 11, 25, 13, 21; the saying as to the evils of ignorance, intemperance, and discord, which Porph. 22, Iambl. 34 (cf. 171) attributes to Pythagoras, and which Hieron (*c. Ruf.* iii. 39, vol. ii. 565, Vall.) attributes to Archippus and to Lysis; the apophthegms of Theano on the duty and position of women; ap. Stob. *Floril.* 74, 32, 53, 55; Iambl. *V. P.* 55, 132; Clemens, *Strom.* iv. 522 D; the utterance of Clinias, ap. Plut. *Qu. Conv.* iii. 6, 3; the comparison attributed to Archytas of the judge and the altar, ap. Arist. *Rhet.* iii. 11, 1412 a, 12; the sentences given by Plut. *De Audiendo*, 13, p. 44; *De Exil.* c. 8, p. 602; *De Frat. Am.* 17 p. 488; Ps. Plut. *De Vita Hom.* 151.

of our authorities, and to what has already been said on the political character of the Pythagorean association, we may consider it proved that the school of Pythagoras, believing in the almighty power of the gods, and in future retribution, enforced purity of life, moderation and justice, minute self-examination and discretion in all actions, and especially discouraged self-conceit; that it also required unconditional observance of moral order in the family, in the state, in friendship, and in general intercourse. Important, however, as is the place it thereby occupies in the history of Greek culture, and in that of mankind, yet the scientific value of these doctrines is altogether inferior to their practical significance.

VI. *RETROSPECTIVE SUMMARY.*

CHARACTER, ORIGIN, AND ANTIQUITY OF THE PYTHAGOREAN PHILOSOPHY.

What has been remarked at the close of the last section, and previously at the beginning of this exposition, on the difference between the Pythagorean life and the Pythagorean philosophy, will be confirmed if we take a general survey of the doctrines of the school. The Pythagorean association, with its rule of life, its code of morals, its rites of consecration, and its political endeavours, doubtless had its origin in ethico-religious motives. It has been previously shown (p. 149 sq.) that, among the gnomic poets of the sixth century, complaints of the wretchedness of life and the vices of mankind, on the one hand; and on the other, the demand for order and measure in moral and civil life, were more prominent than with their predecessors; and we recognised in this a deepening of the moral consciousness, which naturally went hand in hand with the contemporary revolution in political conditions, and in the intellectual life of the Greeks. The transformation and spread of the Orphico-Bacchic mysteries point the same way; for they at the same period undoubtedly gained much in religious content and historical importance.[1] To the same causes in all probability Pythagoreanism owed its rise. The lively sense of the sorrows and short-comings inseparable from human existence, in conjunction with an earnest moral purpose, seems to have begotten in Pythagoras the idea of an association which should lead its members by means of religious rites, moral prescripts, and certain special customs, to purity of life and respect for all moral ordinances. It is, therefore, quite legitimate to derive Pythagoreanism in its larger sense—the Pythagorean association and the Pythagorean life—from the moral interest. But it does not follow that the Pythagorean *philosophy* had also a predominantly ethical character.[2] The Ionic naturalistic philosophy sprang, as we have seen, from the Ionic cities with their agitated political life, and from the circle of the so-called seven sages. In the same way the Pythagorean association may have had in the beginning a moral and religious end, and yet may have given birth to a physical theory, since the object of scientific enquiry was at that time the nature of the physical world, and not Ethics. That such was the case must be conceded even by those who regard Pythagoreanism as an essentially ethical system;[1] and the passage quoted above from the *Magna Moralia*, which, moreover, is far from having the weight of a genuine testimony of Aristotle, cannot overthrow this assertion.[2] The object of Pythagorean science was, according to all our previous observations, identical with that of the other pre-Socratic systems—namely, natural phenomena and their causes; Ethics was treated by it only in a quite isolated and superficial manner.[3] Against this no argument can be drawn from the undoubtedly ethical tendency[1] of the Pythagorean life, nor from the great number of Pythagorean moral maxims; for the question is not how the Pythagoreans lived, and what they thought right, but whether, and how far, they sought to understand and to account for moral activities *scientifically*.[2] The conclusion that Pythagoras, in order to make life moral, must also have given account to himself of the nature of morality,[3] is in the highest degree uncertain; it does not at all follow from his practical course of action that he reflected in a scientific manner upon the general nature of morality, and did not, like other reformers and law-givers, content himself with the determination of special and immediate problems. For the same reason the mythical doctrine of transmigration, and the theory of life dependent upon it, cannot here be considered; these are not scientific propositions, but religious dogmas, which moreover were not confined to the Pythagorean school. So far as the Pythagorean *philosophy* is concerned, I can only assent to the judgment of Aristotle,[4] that it was entirely devoted to the investigation of nature. It may be objected that this was not pursued in a physical manner;

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[1] Vide *sup.* p. 61 sq.

[2] As some modern writers have thought, *sup.* p. 184, 1.

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[1] Ritter, *Gesch. d. Phil.* i. 191. 'It is true that the Pythagorean philosophy is also chiefly occupied with the reasons of the world and the physical phenomena of the universe,' etc. The same author, p. 450, says: 'Those parts of morals which they (the Pythagoreans) developed scientifically, seem to have been of little importance.' Brandis, i. 493: 'Although the tendency towards ethics of the Pythagoreans must be regarded as essentially characteristic of their aims and efforts, we find only a few isolated fragments of a Pythagorean doctrine of morality; and these are not even of such a nature that we might suppose them to be the remains of a more comprehensive system of doctrine now lost to us,' etc.

[2] Cf. p. 491, 2. What Brandis says in Fichte's *Zeitschrift*, xiii. 132, in favour of the statement in the *Magna Moralia* cannot outweigh the known spuriousness of this work, and the fact that Aristotle nowhere mentions the personal doctrine of Pythagoras (though he may sometimes refer some Pythagorean customs to him). This text, in fact, does not tell us anything that we have not learned from other sources.

[3] This has been already shown, p. 490 sqq. When, therefore, Heyder (*Ethic. Pythag. Vindic.* p. 10 sq.) appeals in favour of the opposite opinion to Arist. *Ethic. N.* i. 4; ii. 5 (vide *supra*, p. 380, 1, 2), he attributes far too much importance to the expression, συστοιχία τῶν ἀγαθῶν. Aristotle designates by these words the first of the two series of ten numbers, the opposition of which arranged in pairs constitutes the Pythagorean table of contraries (the Limited, the Odd, etc.). But it does not follow from this that the Pythagoreans themselves made use of this designation, or that they understood the ἀγαθὸν and κακὸν in the ethical sense, and not in the physical sense as well. Still less does it follow (as Heyder says *l. c.* and p. 18), that they invented a table of goods and set up a scientific principle for ethics, something like that of Plato.

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[1] On which Schleiermacher relies, *Gesch. der Phil.* 51 sq.

[2] Otherwise we must also reckon, among the representatives of moral philosophy, Heracleitus and Democritus, because of the moral sentences which they have transmitted to us; and Parmenides and Zeno, because their manner of life was like that of the Pythagoreans; not to speak of Empedocles.

[3] Brandis, *Fichte's Zeitschr. f. Phil.* xiii. 131 sq.

[4] *Metaph.* i. 8, 989 b, 33: διαλέγονται μέντοι καὶ πραγματεύονται περὶ φύσεως πάντα· γεννῶσί τε γὰρ τὸν οὐρανὸν καὶ περὶ τὰ τούτου μέρη καὶ τὰ πάθη καὶ τὰ ἔργα διατηροῦσι τὸ συμβαῖνον, καὶ τὰς ἀρχὰς καὶ τὰ αἴτια εἰς ταῦτα καταναλίσκουσιν, ὡς ὁμολογοῦντες, etc. (*supra*, p. 189, 3). *Metaph.* xiv. 3, 1091 a, 18: ἐπειδὴ κοσμοποιοῦσι καὶ φυσικῶς βούλονται λέγειν, δίκαιον αὐτοὺς ἐξετάζειν τι περὶ φύσεως ἐκ δὲ τῆς νῦν ἀφεῖναι μεθόδου. Cf. *Part. Anim.* i. 1; *supra*, p. 185, 3.

that the object of the Pythagoreans was to enquire how law and harmony, morally determined by the concepts of good and evil, lie in the principles of the universe: that all appeared to them in an ethical light, that the whole harmony of the world was regulated according to moral concepts, and that the entire order of the universe is to them a development of the first principle into virtue and wisdom.[1] In reply to this view of Pythagoreanism, much may be said. In itself such a relation of thought to its object is scarcely conceivable. Where scientific enquiry proceeds so exclusively from an ethical interest, as it is supposed to have done in the case of the Pythagoreans, it must also, as it would seem, have applied itself to ethical questions, and produced an independent system of ethics, instead of an arithmetical metaphysic, and cosmology. But this hypothesis also contradicts historical fact. Far from having founded their study of nature on moral considerations, they rather reduced the moral element to mathematical and metaphysical concepts, which they originally obtained from their observation of nature—resolving virtues into numbers, and the opposition of good and evil[2] into that of the limited and unlimited. This is not to treat physics ethically, but ethics physically. Schleiermacher, indeed, would have us regard their mathematics as the technical part of their ethics. He thinks that all virtues and all ethical relations were expressed by particular numbers; he sees an evidently ethical tendency underlying the table of opposites.[1] But as these assertions are devoid of all foundation, it is unnecessary to refute them; how arbitrary they are, must have already appeared from our previous exposition. Ritter observes,[2] more correctly, that the mathematics of the Pythagoreans were connected with their ethics by the general idea of order, which is expressed in the concept of harmony. The only question is whether this order was apprehended in their philosophical system as a moral or a natural order. The answer cannot be doubtful when we reflect that, so far as scientific determinations are concerned, the Pythagoreans sought this order anywhere rather than in the actions of men. For it finds its first and most immediate expression in tones, next in the universe; while, on the other hand, no attempt is made to arrange moral activities according to harmonical proportions. It cannot, therefore, be said that the Pythagoreans founded physics and ethics upon a common higher principle (that of harmony),[3] for they do not treat this principle as equally physical and ethical: it is the interpretation of nature to which it is primarily applied, and for the sake of which it is required; it is only applied to moral life in an accessory manner, and to a far more limited extent.[4] Number and harmony have here an essentially physical import, and when it is said that all is number and harmony, the meaning is not that the order of nature is grounded upon a higher moral order, it simply expresses the nature of the physical world itself. Although, therefore, I willingly admit that the Pythagoreans would not perhaps have arrived at these definitions if the ethical tendency of the Pythagorean association had not quickened their sense of measure and harmony,[1] yet I cannot on that account regard their science itself as ethical: I must consider it in its essential content as purely a system of physics.

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[1] Ritter, *l. c.* 191, 454, and similarly Heyder, *Ethic. Pythag. Vindic.* p. 7 sq.; 13, 31 sq., who thinks that the Pythagorean numbers should be understood symbolically.

[2] As Ritter substantially concedes, *Pyth. Phil.* 132 sq.

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[1] *Ibid.* p. 51, 55, 59.

[2] *Gesch. d. Phil.* i. 455.

[3] Heyder, *l. c.* p. 12 sqq.

[4] Heyder himself indirectly confesses this when he says, p. 14: *Et physica et ethica ad principium eos revocasse utrisque commune et utrisque superius, quod tamen non appellarint nisi nomine a rebus physicis repetito.* Why should they have chosen a merely physical designation, if they had equally in view the moral element?

Nor can I allow that the Pythagorean philosophy originally sprang from the problem of the conditions of knowledge, and not from enquiries concerning the nature of things: that numbers were regarded by the Pythagoreans as the principle of all Being, not because they thought they perceived in numerical proportions the permanent ground of phenomena, but because, without number, nothing seemed to them cognisable: and, because according to the celebrated principle, 'like is known by like,' the ground of cognition must also be the ground of reality.[2] Philolaus, it is true, urges in proof of his theory of numbers, that without number no knowledge would be possible, that number admits of no untruth and alone determines and makes cognisable the relations of things.[1] But he has also previously shown,[2] quite in an objective manner, that everything must be either limited or unlimited, or both together, and it is only to prove the necessity of the limit that he brings forward this fact among others, that without limit nothing would be knowable. Aristotle says[3] that the Pythagoreans regarded the elements of numbers as the elements of all things, because they thought they had discovered a radical similarity between numbers and things. This observation, however, indicates that their theory started from the problem of the essence of things, rather than that of the conditions of knowledge. But the two questions were in fact not separated in ancient times; it is the distinctive peculiarity of the Pre-Socratic dogmatism that thought directs itself to the cognition of the real, without investigating its own relation to the object, or the subjective forms and conditions of knowledge. Consequently no distinction is drawn between the grounds of knowledge and the grounds of reality; the nature of things is sought simply in that which is most prominent to the philosopher in his contemplation of them; in that which he cannot separate from them in his thought. The Pythagoreans in this procedure resemble other schools,

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[1] We must not, however, overlook the fact that other philosophers who were famous for their Pythagorean manner of life, as Parmenides and Empedocles, as well as Heracleitus, whose ethics are very similar to those of Pythagoras, arrived at perfectly different philosophic conclusions.

[2] Brandis *Rhein. Mus.* ii. 215 sqq.; *Gr.-röm. Phil.* i. 420 sq., 445; Fichte's *Zeitschr. f. Phil.* xiii. 134 sqq.; *Gesch. d. Entw.* i. 164 sq. (cf. Reinhold, *Beitrag z. Erl. d. pyth. Metaph.* p. 79 sq.). This assertion is connected with the theory of which we have just spoken (viz. that Pythagoreanism was chiefly ethical in character), by the following remark (*Zeitschr. f. Phil.* 135). Since the Pythagoreans found the principle of things in themselves, and not outside themselves, they were led to direct their attention all the more to the purely internal side of moral activity; or conversely. Here, however, strictly speaking, Brandis makes the general

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idea of an internal or idealistic tendency the starting-point of Pythagoreanism, and not the precise question of the truth of our knowledge.

[1] Fr. 2, 4, 18, *supra*, p. 371, 2; 372, 1.

[2] Fr. i. *supra*, p. 379, 1.

[3] *Metaph.* i. 5, *supra*, p. 369, 1.

for example, the Eleatics, whose objective starting-point Brandis contrasts with the so-called subjective starting-point of the Pythagoreans. Philolaus says that all must be number to be cognisable. In the same way, Parmenides says that only Being exists, for Being alone is the object of speech and cognition.[1] We cannot conclude from this that the Eleatics first arrived at their metaphysic through their theory of knowledge; nor is the conclusion admissible in the case of the Pythagoreans. It could only be so, if they had investigated the nature of the faculty of cognition as such, apart from that of the object of cognition; if they had based their number-theory upon a theory of the faculty of knowing. Of this, however, there is no trace;[2] for the incidental remark of Philolaus, that the sensuous perception is only possible by means of the body,[3] even if genuine, cannot be regarded as a fragment of a theory of knowledge, and what later writers have related as Pythagorean,[4] on the distinction between reason, science, opinion, and sensation, is as untrustworthy as the statement of Sextus,[5] that the Pythagoreans declared mathematical reason to be the criterion. Had the Pythagorean philosophy started from the question—What is the unconditionally certain element in our ideas? instead of the other question, What is the permanent and essential element in things, the cause of their being, and of their qualities?—the whole system, as Ritter observes,[1] would have had a dialectic character, or at any rate would have been constructed on some basis involving methodology and a theory of knowledge. Instead of this, Aristotle expressly assures us that the Pythagoreans restricted their enquiry entirely to cosmological questions;[2] that dialectic and the art of determining the concept were unknown to them as to all the pre-Socratics—only some slight attempts in that direction having been made by them in their numerical analogies.[3] All that we know of their doctrine can only serve to confirm this judgment. The Neo-Pythagorean school adopted and elaborated[4] after their

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[1] V. 39:—

οὔτε γὰρ ἂν γνοίης τό γε μὴ ἐὸν (οὐ γὰρ ἐφικτόν),
οὔτε φράσαις. τὸ γὰρ αὐτὸ νοεῖν ἔστιν τε καὶ εἶναι.

[2] Brandis also concedes this, *Zeitschr. f. Phil.* xiii. 135, when he says that the Pythagoreans did not start from the definite question of the conditions of knowledge. Only he has no right to add that they found the principle of things in themselves, and not outside themselves. They found it in numbers which they sought as well within themselves as without: numbers were for them the essence of things in general.

[3] *Supra*, p. 483, 1.

[4] *Supra*, p. 479, 3.

[5] *Math.* vii. 92: *οἱ δὲ Πυθαγορικοὶ τὸν λόγον μέν φασιν [κριτήριον εἶναι], οὐ κοινῶς δὲ, τὸν δὲ ἀπὸ τῶν μαθημάτων περιγινόμενον, καθάπερ ἔλεγε καὶ Φιλόλαος, θεωρητικόν τε ὄντα τῆς τῶν ὅλων φύσεως ἔχειν τινὰ συγγένειαν πρὸς ταύτην.* It is evident that the criterion here is added by the writer, and that the whole is taken from the propo-

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sitions of Philolaus (quoted above) on number, as the condition of knowledge.

[1] *Pyth. Phil.* 135 sq.

[2] *Supra*, p. 499, 2.

[3] *Metaph.* i. 5, 987 a, 20: *περὶ τοῦ τί ἐστιν ἤρξαντο μὲν λέγειν καὶ ὁρίζεσθαι, λίαν δ' ἁπλῶς ἐπραγματεύθησαν. ὡρίζοντό τε γὰρ ἐπιπολαίως, καὶ ᾧ πρώτῳ ὑπάρξειεν ὁ λεχθεὶς ὅρος, τοῦτ' εἶναι τὴν οὐσίαν τοῦ πράγματος ἐνόμιζον.* *Ibid.* c. 6, 987 b, 32. The difference between the theory of ideas and the Pythagorean theory of numbers results from Plato's occupation with logical enquiries: *οἱ γὰρ πρότεροι διαλεκτικῆς οὐ μετεῖχον.* *Ibid.* xiii. 4, 1078 b, 17 sqq.; Socrates was the first to define concepts: *τῶν μὲν γὰρ φυσικῶν ἐπὶ μικρὸν Δημόκριτος ἥψατο μόνον . . . οἱ δὲ Πυθαγόρειοι πρότερον περί τινων ὀλίγων, ὧν τοὺς λόγους εἰς τοὺς ἀριθμοὺς ἀνῆπτον, οἷον τί ἐστι καιρὸς ἢ τὸ δίκαιον ἢ γάμος.* It is from this passage no doubt that the statement of Favorin. is taken, ap. Diog. viii. 48. [*Πυθαγόραν*] *ὅροις χρήσασθαι διὰ τῆς μαθηματικῆς ὕλης, ἐπὶ πλέον δὲ Σωκράτην.* In the texts, *De Part. An.* i. 1 (*supra*, 185, 3), and *Phys.* ii. 4, 194 a, 20, the Pythagoreans are not once mentioned with Democritus.

[4] Cf. Part III. b, 111, 2nd ed.

manner, among other later doctrines, the Stoico-Peripatetic logic and the Platonic theory of knowledge; but no one will now believe in the authenticity of writings which put into the mouths of Archytas and other ancient Pythagoreans theories which are manifestly derived from Plato, Aristotle or Chrysippus.[1] What we certainly know of Philolaus and Archytas gives us no right to suppose that the Pythagoreans were in advance of the other pre-Socratic philosophers in logical practice and the development of the scientific method.[2] And there certainly is not any reason for attributing the commencement of linguistic enquiries to Pythagoras.[3] If, therefore, Aristotle describes the

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[1] Röth (ii. a, 593 sq.; 905 sq.; b, 145 sq.), however, takes the pseudo-Pythagorean fragments and the assertions of Iamblichus, *V. P.* 158, 161, for authentic evidence.

[2] Philolaus in his discussion of the Limiting and Unlimited (*supra*, p. 379, 1) makes use of a disjunctive process of reasoning; but this is no sign of a post-Platonic origin (as Röthenbücher, *Syst. d. Pyth.* 68, believes); nor is it even remarkable in a philosopher of that epoch. We find Parmenides employing the same mode of reasoning (v. 62 sqq.), and the demonstrations of Zeno are much more artificial than those of Philolaus above mentioned. In the latter, it is true the disjunctive major proposition is first announced. Then of the three cases which the author puts as being possible, two are excluded. But this detail is of little importance, and it has a sufficient parallel in the manner in which Diogenes (vide *supra*, p. 286, 2) at this same epoch first determines generally the qualities of the First Being, and then proves that these qualities belong to the air. Aristotle (vide *sup.* p. 480, 2) quotes from Archytas a few definitions, adding that these definitions have respect to the matter as well as the form of the objects in question. But in this he is not bringing forward a principle of Archytas, but making a remark of his own. Porph. is only reiterating this remark when he says (*In Ptol. Harm.* 196): The definitions of the concept characterise its object, partly in form, partly in matter: *οἱ δὲ κατὰ τὸ συναμφότερον, οὓς μάλιστα ὁ Ἀρχύτας ἀπεδέχετο.* But independently of this remark the definitions of Archytas prove very little.

[3] Pythagoras, it is said, considered the wisest man to be he who first gave their names to things (Cic. *Tusc.* i. 25, 62; Iambl. *V. P.* 56, 82; Procl. *in Crat.* c. 16; Ælian, *V. H.* iv. 17; *Exc. e scr. Theod.* c. 32, at the end of Clemens Al. p. 805,

Pythagoreans as neither dialectical nor ethical philosophers, but purely and simply as Physicists,[1] we can but agree in the statement, and approve of the later writers who have followed him in this particular.[2]

Accordingly our conception of the origin of the Pythagorean system must be as follows. From the spiritual life of the Pythagorean society arose the endeavour for an independent pursuit of the enquiry concerning the causes of things, which had already been stimulated from another side: this enquiry was primarily directed by the Pythagoreans to the explanation of nature, and only secondarily to the establishment of moral activity; but as it seemed to them that law and order were the highest element in human life, so in nature it was the order and regular course of phenomena, especially as displayed in the heavenly bodies, and in the relation of tones which arrested their attention. They thought they perceived the ground of all regularity and order in the harmonical relations of numbers, the scientific investigation of which was inaugurated by them, but which were already invested with great power and significance in the popular belief of the Greeks. Thus by a natural

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D, Sylb.). But even were this statement true, we could not infer from it (as Röth does, ii. a, 592) the existence of specific enquiries into language among the Pythagoreans. The assertion of Simplicius (*Categ. Schol. in Arist.* 43 b, 30) that the Pythagoreans regarded names as arising φύσει and not θέσει, and recognised for each thing but one name belonging to it by virtue of its nature, cannot be considered as a tradition concerning the *ancient* Pythagoreans. It refers, no doubt, to the categories falsely attributed to Archytas.

[1] *Metaph.* i. 8, vide *supra*, p. 189, 3.

[2] Sext. *Math.* x. 248, 284; Themist. *Or.* xxvi. 317 B; Hippolyt. *Refut.* i. 2, p. 8; Eus. *Præp. Ev.* xiv. 15, 9; Phot. *Cod.* 249, p. 439 a, 33; Galen, *Hist. Phil.* sub init.

sequence of thought they arrived at the theory that all things, according to their essence, are number and harmony.[1] This presupposition was then applied by them to other adjacent spheres; they expressed the nature of certain phenomena by numbers, and classified whole series of phenomena according to numbers, and so there gradually resulted the totality of doctrines, which we call the Pythagorean system.

This system is therefore, as it stands, the work of various men and various periods; its authors did not consciously attempt from the beginning to gain a whole of scientific propositions mutually supporting and explaining one another, but as each philosopher was led by his observation, his calculations, or his imagination, so the fundamental conceptions of the Pythagorean theory of the universe were developed, sometimes in one direction, sometimes in another. The traces of such an origin are not entirely obliterated even in our imperfect traditions of the doctrine of the Pythagoreans. That their principle was apprehended in many different ways in the school we cannot indeed admit; but the development of it was certainly not from the same type. The table of the ten opposites belonged, according to Aristotle, only to some, who were, it would seem, later Pythagoreans. The geometric construction of the elements, and the discrimination of four organs and of four vital functions in man, were introduced by Philolaus; the doctrine of the ten moving heavenly bodies seems to have been less ancient than the poetical conception of the spheral harmony; as to the relation of particular numbers to concrete phenomena, little agreement is to be found. So far therefore the question might suggest itself, whether the Pythagorean system can rightly be spoken of as a scientific and historical whole, and if this be conceded on account of the unity of the leading thoughts, and the recognised inter-connection of the school, there would still remain the doubt whether the system originates with the founder of the Pythagorean association; and therefore, whether the Pythagorean philosophy is to be classed with the ancient Ionian physical philosophies, or with later systems.[1] This doubt, however, must not carry us too far. Our historical authorities indeed allow us to pronounce no definite judgment as to how much of the Pythagorean doctrine belonged to Pythagoras himself. Aristotle always ascribes its authorship to the Pythagoreans, never to Pythagoras, whose name is not mentioned by him at all except in a very few places.[1] Later writers[2] are untrustworthy in proportion as they pretend to a knowledge of Pythagoras; and the scanty utterances of earlier writers are too indefinite to instruct us as to the share taken by Pythagoras in the philosophy of his school. Xenophanes alludes to his assertions on transmigration as a singularity;[3] but this belief, of which Pythagoras can scarcely have been the author, furnishes no argument as to his philosophy. Heracleitus mentions him[4] as a man who laboured beyond all others to amass knowledge,[5] and who by his evil arts, as he calls them, gained the reputation of wisdom; but whether this wisdom consisted in philosophic theories, or in empirical knowledge, or in theological doctrines, or in practical efforts, cannot be gathered from his words. Nor do we gain any information on this point from

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[1] Cf. p. 376. Brandis (*Gesch. d. Entw. d. gr. Phil.* i. 165) here makes an objection which I cannot endorse. 'The remark,' he says, 'that all phenomena are regulated according to certain numerical relations, presupposes observations quite foreign to that epoch.' Long before Pythagoras, it was known that the revolutions of the sun, moon, and planets, the succession of day and night, the seasons, &c., take place according to fixed times, and that they regularly recur after the lapse of intervals of time marked by the same number. Certainly human life was divided into several ages before Pythagoras. The Pythagoreans themselves measured the numerical relations of tones; and at any rate in the number of tones and chords, a definite standard must have been given to them. It is impossible, moreover, that they should not have had in their possession other proofs that all order is based on measure and number. Philolaus says so explicitly, and it is on this observation that Aristotle founds the Pythagorean theory of numbers (cf. pp. 369, 1; 370, 1; 376 sq.).

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[1] It is for this reason that Brandis, for example (i. 421), only speaks of Pythagoreanism after having spoken of the Eleatic system, and that Strümpell (vide *sup.* p. 209, 1) sees in Pythagoreanism an attempt to reconcile Heracleitus with the Eleatics.

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[1] Among the authentic writings which have been preserved, the only passages where Pythagoras is mentioned are *Rhet.* ii. 23 (vide *supra*, 341, 1) and *Metaph.* i. 5 (vide *infra*, 510, 5). As to the works which have been lost, we should cite besides the texts of Ælian, Apollonius, and Diogenes (of which we have spoken, *supra*, p. 338. 3, 4; 345, 5), the Pythagorean traditions we have extracted (p. 345, 1; 338, 3) from Plutarch and Iamblichus. But these texts do not prove that Aristotle himself knew anything of Pythagoras. There is also the statement of Porph. *V. P.* 41, which perhaps ought to be corrected so as to mean that Aristotle spoke of the symbols of the Pythagoreans, and not of Pythagoras.

[2] Even the contemporaries and disciples of Aristotle, as Eudoxus, Heracleides, and others, whose assertions concerning Pythagoras have been already quoted; also the author of the *Magna Moralia*, vide *supra*, p. 491, 4.

[3] Vide *supra*, p. 481, 1.

[4] Vide *supra*, p. 336. 5, and Fr. 23 ap. Diog. ix. 11 (cf. Procl. *in Tim.* 31 F; Clemens, *Strom.* i. 315 D; Athen. xiii. 610 b): *πολυμαθηΐη νόον οὐ διδάσκει* (cf. on this reading, Schuster, *Heraclit.* p. 65, 2). *Ἡσίοδον γὰρ ἂν ἐδίδαξε καὶ Πυθαγόρην, αὖθίς τε Ξενοφάνεα καὶ Ἑκαταῖον.*

[5] The words *ἱστορία* and *πολυμάθεια* describe the man who enquires from others, and seeks to learn, in opposition to the man who forms his opinions himself by his own reflection.

Empedocles, when he celebrates the wisdom in which Pythagoras surpassed all men, and foresaw the distant future.[1] But though direct evidence fails us yet on general grounds, it is probable that at any rate the fundamental thoughts of the system emanated from Pythagoras himself.[2] In the first place this furnishes the best explanation of the fact that the system, so far as we know, was confined to the adherents of Pythagoras, and, among them, was universally disseminated; and moreover, that all that we are told of the Pythagorean philosophy, in spite of the differences on minor points, agrees in the main traits. Secondly, the internal relation of the Pythagorean theory to other systems gives us reason to suppose that it originated previously to the beginning of the fifth century. Among all the later systems, there is none in which the influence of the Eleatic doubt concerning the possibility of Becoming does not manifest itself. Leucippus, Empedocles, and Anaxagoras, however their views may differ in other respects, are all at one in admitting the first proposition of Parmenides, viz., the impossibility of Becoming, and consequently in reducing birth and decay to mere change. The Pythagoreans might be supposed to be especially open to the influence of these profound doctrines of their Eleatic neighbours; but not a trace of this influence is to be found. Empedocles, who alone, while adhering to the Pythagorean life and theology, is as a philosopher allied to Parmenides, on this very account departs from the Pythagorean school, and becomes the author of an independent theory. This tends to prove that the Pythagorean philosophy not only did not arise out of an attempt to reconcile the Heracleitean and Eleatic doctrines, but that it was not even formed under the influence of the Eleatic system. On the other hand, the Eleatic system seems to presuppose Pythagoreanism; for the abstraction of reducing the multitudinous mass of phenomena to the one concept of being, is so bold that we cannot avoid seeking for some historical preparation for it; and no system adapts itself better to this purpose, as has already been shown (p. 204), than the Pythagorean, the principle of which is exactly intermediate between the sensible intuition of the ancient Ionians, and the pure thought of the Eleatics. That the Pythagorean cosmology was known to Parmenides, at any rate, is probable from its affinity with his own, which will hereafter be noticed. We have, therefore, every reason to believe that the Pythagorean theory is earlier than that of Parmenides, and that in regard to its main outlines Pythagoras is really its author. We shall also presently find that Heracleitus owes not a little to the Samian philosopher of whom he speaks so harshly, if what he says about the arising of all things from contradictories and from harmony, is really connected with the analogous doctrines of the Pythagoreans. How far the philosophic development of doctrine was carried by Pythagoras, cannot of course be discovered; but if he is to be regarded as the founder of the Pythagorean system, he must at least have enunciated in some form the fundamental definitions that all is number, that all is harmony; that the opposition of the perfect and imperfect, the straight and the crooked, pervades all things; and since these definitions themselves can only have arisen in connection with the Pythagorean arithmetic and music, we must also refer the beginning of arithmetic and music to him. Lastly, we shall find that Parmenides placed the seat of the divinity which governs the world in the centre of the universe, and made the different spheres revolve around the centre; we may therefore suppose that the central fire and the theory of the spheres had also been early taught by the Pythagoreans, though the motion of the earth, the counter-earth, and the precise number of the ten revolving spheres were probably of later origin.

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[1] In the verses ap. Porph. *V. P.* 30; Iambl. *V. P.* 67. We are not, however, absolutely certain that these verses really relate to Pythagoras (cf. p. 338, 4)—

ἦν δέ τις ἐν κείνοισιν ἀνὴρ περιώσια εἰδὼς,
ὃς δὴ μήκιστον πραπίδων ἐκτήσατο πλοῦτον,
παντοίων τε μάλιστα σοφῶν ἐπιήρανος ἔργων,
ὁππότε γὰρ πάσαισιν ὀρέξαιτο πραπίδεσσι,
ῥεῖά γε τῶν ὄντων πάντων λεύσσεσκεν ἕκαστα,
καί τε δέκ' ἀνθρώπων καὶ τ' εἴκοσιν αἰώνεσσι.

[2] This opinion is found in the same words; and founded on the same proofs, in the 2nd and 3rd editions of this work. This does not prevent Chaignet (i. 160) from saying: *Zeller veut, que l'élément scientifique, philosophique de la conception pythagoricienne ait été postérieur à Pythagore et étranger à ses vues personnelles et à son dessein primitif, tout pratique, selon lui.*

Whether Pythagoras himself had teachers from whom his philosophy either wholly or partially sprang, and where these are to be sought, is matter of controversy. As is well known, the later ages of antiquity believed him to have derived his doctrines from the East.[1] In particular, either Egypt, or Chaldæa and

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[1] Cf. p. 326 sq.

Persia, would soonest occur to the mind; and ancient writers especially mention these countries when they speak of the travels of Pythagoras in the East. To me such an origin of his doctrine seems unlikely. There is, as has been already shown, an utter absence of all trustworthy evidence in its favour, and the internal points of contact with Persian and Egyptian philosophy, which may be found in Pythagoreanism, are not nearly sufficient to prove its dependence upon these foreign influences. What Herodotus says of the agreement between Pythagoreans and Egyptians[1] is confined to the belief in transmigration, and the custom of interring the dead exclusively in linen garments. But transmigration is found not merely in Pherecydes, with whose treatise and opinions Pythagoras may have been acquainted, if even he were not a scholar of his in the technical sense;[2] it was certainly an older Orphic tradition,[3] and the same may very likely be true of the customs in regard to burial: in no case could we infer from the appropriation of these religious traditions the dependence of the Pythagorean *philosophy* upon the alleged wisdom of the Egyptian priests. Of the distinctive principle of this system, the number-theory, we find no trace among the Egyptians; the parallels, too, which might be drawn between the Egyptian and Pythagorean cosmology are much too indefinite to prove any close historical interconnection between them: and the same holds good of the Pythagorean symbolism, in which some have also seen traces of Egyptian origin.[1] The system of caste and other social institutions of the Egyptians were not imitated by the Pythagoreans. We might indeed compare the zeal of these philosophers for the maintenance and restoration of ancient customs and institutions, with the fixed invariability of the Egyptian character; but the reasons of this phenomenon lie nearer to hand in the circumstances and traditions of the colonies of Magna Græcia; and the difference of the Doric and Pythagorean element from the Egyptian is, on closer observation, so important, that there is no warrant for deriving the one from the other. The same may be said of the Persian doctrines. The Pythagorean opposition of the uneven and the even, of the better and the worse, &c., might find a parallel in the Persian dualism; and it is apparently this similarity which gave occasion, in ancient times, to the theory that the Magi, or even Zoroaster, were the teachers of Pythagoras. But it surely did not require foreign instruction to observe that good and evil, straight and crooked, masculine and feminine, right and left, exist in the world; the specific manner, however, in which the Pythagoreans designated these opposites; their reduction to the fundamental oppositions of the uneven and the even, the limited and unlimited, the decuple classification, generally speaking, the philosophic and mathematical treatment of the subject, is as foreign to the doctrine of Zoroaster as the theological dualism of a good and evil Deity is foreign to Pythagoreanism. Other similarities which might be adduced, such as the significance of the number seven, the belief in a future existence, and many ethical and religious apophthegms collectively, prove so little, and differ from each other so greatly as to details, that they cannot be discussed in this place.

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[1] ii. 81, 123.

[2] On Pherecydes and his pretended relations with Pythagoras, vide p. 69, 3; 327 sq.

[3] Vide *supra*, p. 67 sq.

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[1] As Plutarch does, *Qu. Conv.* viii. 8, 2; *De Is.* 10, p. 354.

The life and science of the Pythagoreans are only really to be understood in connection with the specific character and conditions of culture of the Greek people in the sixth century. Pythagoreanism, as an attempt at an ethico-religious reform,[1] must be classed with other endeavours which we meet with contemporaneously or previously in the work of Epimenides and Onomacritus, in the rise of mysteries, in the wisdom of the so-called seven wise men, and of the Gnomic poets; and it is distinguished from all similar phenomena by the manysidedness and force with which it embraced all the elements of culture of the time, religious, ethical, political, and scientific, and at the same time created for itself, in a close society, a fixed nucleus and aim for its activity. Its more precise characteristics resulted from its connection with the Doric race and Doric institutions.[2] Pythagoras himself, it is true, came from the Ionian island of Samos, but as we have already seen, it is probable that his parents, though of Tyrrhene race, had emigrated thither from Phlius in Peloponnesus, and the principal theatre of his own activity was in Doric and Achæan cities. At any rate his work displays the essential traits of the Doric character. The worship of the Dorian Apollo,[3] the aristocratic politics, the

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[1] Vide p. 496, 352.

[2] Cf. the excellent remarks of O. Müller, *Gesch. Hellen. Stämme und Stätte*, ii. a, 365 sq. b; 178 sq.; 392 sq.; Schwegler, *Gesch. d. gr. Phil.* 53 sq.

[3] Vide *supra*, p. 338, 340.

Syssitia, the gymnastics, the ethical music, the proverbial wisdom of the Pythagoreans, the participation of women in the education and society of men, the strict and measured moral code, which knows no higher duties than the subordination of the individual to the whole, respect for traditional customs and laws, reverence for parents, for constituted authority, and for old age—all this plainly shows us how great a share the Doric spirit had in the origination and development of Pythagoreanism. That this spirit is also unmistakeable in the Pythagorean philosophy has already been observed;[1] but the union in Pythagoras of a scientific effort for the interpretation of nature, with his moral and religious activity, is probably due to the influence of the Ionic physiologists, who could not have been unknown to a man so erudite and so far beyond all his contemporaries[2] in his passion for knowledge. The statement, however, that Anaximander was his instructor[3] can scarcely be more than a conjecture, based on chronological probability and not on any actual tradition. But it is very likely that he may have been acquainted with his elder contemporary, who was so prominent among the earliest philosophers, whether we suppose the acquaintance to have been personal, or merely through Anaximander's writings. The influence of Anaximander may perhaps be traced, not only in the general impulse towards the study of the causes of the universe, but also in the Pythagorean theory of the spheres (vide p. 445, 1), which has an immediate connection with the theory of which Anaximander is supposed to be the author (vide 252, 1). And if the distinction of the limited and unlimited originally belongs to Pythagoras, Anaximander may nevertheless have had a share in inspiring it; only from Anaximander's conception of the unlimited in space Pythagoras would have abstracted the general concept of the unlimited, which is an essential element of all things, and primarily of number. By Pythagoras physics or philosophy (for they were identical at that period) became first transplanted from their most ancient home in Ionian Asia Minor into Italy, there to be further developed in a specific manner. That in this development, side by side with the Hellenic element, the peculiar character of the Italian races by whom the birthplace of Pythagoreanism was surrounded, may have made itself felt, is certainly conceivable; but our historical evidence[1] in favour of this conjecture is not sufficient even to render it probable.[2] If anything was contributed from this side to Pythagoreanism, it can only have consisted in some details of a quite subordi-

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[1] P. 502, 507 sq.

[2] As Heracleitus says, vide *supra*, p. 336, 5; 510, 4.

[3] Neanthes ap. Porph. Cf. p. 326, note.

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[1] Cf. Schwegler, *Röm. Gesch.* i. 561 sq., 616. Klausen, *Æneas und die Penaten*, ii. 928 sq., 961 sq.; O. Müller, *Etrusker*, ii. 139 A, 53, 345 A, 22.

[2] Even the ancient tradition that Numa was a disciple of Pythagoras (vide Part III. 6, 69, 2nd edition) seems to presuppose a certain likeness between the Roman religion and Pythagoreanism. Plut. (*Numa*, c. 8, 14) cites the following points of resemblance between Numa and Pythagoras. 'Both,' he says, 'represented themselves as plenipotentiaries of the gods (which many others have also done). Both love symbolic prescripts and usages (this also is very common; but the Roman symbols are explained by Plutarch in a very arbitrary manner). As Pythagoras introduced ἐχεμύθια, so Numa established the worship of the muse Tacita (who is not a muse, and has no connection with the prescript of silence, vide Schwegler, p. 562). Pythagoras conceived the divinity (Plutarch asserts) as a pure spirit; Numa, from the same point of view, prohibited images of the gods. (Pythagoras did not prohibit them; and if the ancient Roman cultus was devoid of images, the reason of this is not to be found in a purer conception of the Deity, but, as with the Germani and Indians, and other barbarous peoples, in the absence of plastic arts, and in the special character of the Roman

religion.) The sacrifices of Numa, were scarcely any of them bloody; nor were those of the Pythagoreans. (This does not seem certain, according to our previous observations, and it would be of little consequence if it were. For the Greeks, especially in ancient times, had many unbloody sacrifices, and the Romans not only sacrificed animals in great numbers, but had also human sacrifices.) Lastly, not to mention other insignificant similarities, Numa placed the fire of Vesta in a round temple, 'to represent the form of the world and the position of the central fire in the midst of it.' (But the ancient Romans certainly were unacquainted with the central fire, and it is impossible to prove that the form of the temple of Vesta was intended to symbolise that of the world. At any rate, the apparent roundness of the celestial vault was perceptible to every one by immediate observation, and on the other hand, if the Pythagoreans called their central fire Hestia, they would naturally be thinking, not of the Roman Vesta, but of the Greek Hestia.) It is the same with certain other analogies between Roman and Italian customs and those of the Pythagoreans. Beans were forbidden to the flamen Dialis, as they were among the Pythagoreans, according to a later tradition and custom. But the Pythagoreans no doubt borrowed this custom, as well as their asceticism generally, from the Orphic mysteries. They are said to have followed the Roman and Etruscan usage of turning to the right when they prayed. But it is clear from Plut, *l. c.*, that such a custom was unknown to them. Even were it otherwise, the coincidence would prove little. This holds good of other coincidences, by which Plut. *Qu. Conv.* viii. 7, 1, 3, seeks to prove that Pythagoras was an Etruscan. The Roman doctrine of Genii and Lares may in many respects resemble the Pythagorean belief in dæmons; but the Pythagoreans found this belief already in the Greek religion. This resemblance, then, simply points to the general affinity of the Greek and Italian peoples. Still less can be deduced from the circumstance that the Pythagoreans, like the Romans (and the Greeks and most nations), regarded the interment of an unburied corpse as a sacred duty; but what Klausen (p. 362) quotes to prove traces of Metempsychosis in the Roman legend is not conclusive. We might, with more reason, compare the ancient Roman notion that Jupiter, the prince of spirits, sends souls into the world and recalls them (Macrob. *Sat.* i. 10), with the doctrine said to have been taught by the Pythagoreans, of the soul proceeding from the world-soul (*supra*, p. 447, 1). But first we may ask whether this doctrine was really held by the ancient Pythagoreans, and next we must remember that the belief in the celestial origin of the soul and its return to æther was not unknown to the Greeks (vide *supra*, p. 69, 1; 70, 4). Some of the Roman institutions and opinions may also remind us of the Pythagorean theory of numbers. But the likeness is not so great that we can nate importance; for the Greeks of Lower Italy were as little inclined to adopt philosophic doctrines from the surrounding barbarians, as the barbarians were in a condition to impart them. All the more favourable

legitimately regard this theory merely as the philosophic expression of the ancient Roman and Italian superstitions about numbers. Among the Romans, as among the Pythagoreans, uneven numbers were considered lucky (vide Schwegler, *l. c.*, 543, 561; Rubino, *De Augur. et Pontif. ap. vet. Rom. Num.* 1852, p. 6 sq.; cf. also Plin. *Hist. Nat.* xxviii. 2, 23), and for this reason the Romans and the Pythagoreans assigned to the superior deities an uneven number, and to the inferior deities an even number, of victims (Plut. *Numa*, 14; Porph. *v. Pyth.* 38; Serv. *Bucol.* viii. 75; v. 66). But this idea and that custom were not exclusively Pythagorean: they belonged to the Greeks in general. Plato, at any rate, says (*Laws*, iv. 717 A): *τοῖς χθονίοις ἄν τις θεοῖς ἄρτια καὶ δεύτερα καὶ ἀριστερὰ νέμων ὀρθότατα τοῦ τῆς εὐσεβείας σκοποῦ τυγχάνοι, τοῖς δὲ τούτων ἄνωθεν τὰ περιττά*, etc.; and it is not probable that he is merely following a Pythagorean tradition. It is much more likely that in this, as in his other laws, he is adhering as much as possible to the customs of his own country. Lastly, in the division of the Roman city, we see carried out a rigorous numerical schematism, of which the bases are the number three and the number ten; and the religious ritual has in it something analogous (Schwegler, p. 616). But this is not peculiar to Rome and Italy. In Sparta, for example (not to mention more distant nations, like the Chinese or Galatians), the population was divided according to the numbers three and ten; there were 9,000 Spartans and 30,000 Periæci. In the nine days' festival of the *Κάρνεια*, they eat in nine arbours, nine men in each (*Athen.* iv. 141 E). Ancient Athens had four tribes, each tribe three *φρατρίαι* (?), each *φρατρία* thirty gentes, each gens thirty families. The smallest round number, with the Greeks as with the Romans, was three (with the Pythagoreans, four had a higher value), then came ten, then 100, then 1,000, then 10,000. One of the highest numbers of this kind was *τρισμύριοι*. Hesiod had a good deal to say of the significance of certain numbers (vide *supra*, 376. 3). The predilection for numerical schematism might well exist among different peoples without being the result of any direct historical connection between them. Among the Pythagoreans, it sprang chiefly from speculative motives; among others, *e.g.* the Romans, it arose from the practical sense of order. I cannot, therefore, agree with the theory which attributes to the peoples and religions of Italy an important influence on Pythagoreanism. On the other hand, as we shall see later on (Part III. b, 69 sq , 2 A, 2nd ed.), and as we have already seen in the quotation (p. 341. 1), the name of Pythagoras was known to the Romans before that of any other Greek philosopher, and was greatly venerated by them.

was the soil which philosophy found in the Magna Grecian colonies themselves, as is proved by the growth it there attained, and by all that we know of the culture of these cities. If further proof, however, be required, it lies in the fact that, contemporaneously with the Pythagorean, another branch of Italian philosophy was developed, which also owed its origin to an Ionian. But before we proceed to examine this system, we must direct our attention to certain men who have a connection with Pythagoreanism, although we cannot precisely include them in the Pythagorean school.

VII. *PYTHAGOREANISM IN COMBINATION WITH OTHER ELEMENTS. ALCMÆON, HIPPASUS, ECPHANTUS, EPICHARMUS.*

The physician Alcmæon,[1] of Crotona, is said to have been a younger contemporary, by some even a disciple, of Pythagoras.[2] Both statements, however, are uncertain,[3] and the second cannot possibly in the stricter sense be true; for Aristotle (*loc. cit.*) expressly discriminates Alcmæon from the Pythagoreans, and his theories are by no means invariably in agreement with theirs; yet it is plain, even from the little we know of him and his writings,[1] that the Pythagorean doctrine was not without influence on him. Besides the anatomical and physiological enquiries, in which his chief merit seems to have consisted,[2] we find mention,

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[1] Vide, in regard to Alcmæon: Philippson, Ὕλη ἀνθρωπίνη, p. 183 sqq.; Unna, *De Alcmæone Crotoniata* in the *Phil.-Histor. Studien* von Petersen, pp. 41–87, where the statements of the ancients and the fragments of Alcmæon have been carefully collected. Krische, *Forschungen*, etc., 68–78. We know nothing of Alcmæon's life, except his origin and the name of his father (Πειρίθοος, Πειρίθος or Πέριθος). Aristotle wrote against him, we are told, Diog. v. 25.

[2] Arist. *Metaph.* i. 5, 986 a, 27 (after enumerating the ten Pythagorean opposites): ὅνπερ τρόπον ἔοικε καὶ Ἀλκμαίων ὁ Κροτωνιάτης ὑπολαβεῖν καὶ ἤτοι οὗτος παρ' ἐκείνων ἢ ἐκεῖνοι παρὰ τούτου παρέλαβον τὸν λόγον τοῦτον· καὶ γὰρ ἐγένετο τὴν ἡλικίαν Ἀλκμαίων ἐπὶ γέροντι Πυθαγόρᾳ, ἀπεφήνατο δὲ παραπλησίως τούτοις. Diog. viii. 83: Πυθαγόρου διήκουσε. Iamblichus, *V. P.* 104, reckons him among the μαθητεύσαντες τῷ Πυθαγόρᾳ πρεσβύτῃ νέοι; and Philop. *in Arist. De An.* c. 8, calls him a Pythagorean. Simplicius, in his remarks on the same treatise, p. 8, says more cautiously that others call him a Pythagorean, but that Aristotle does not.

[3] Diogenes and Iamblichus both no doubt derived their information, the one directly, the other indirectly, from the passage in Aristotle. Now in this passage the

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words *ἐγένετο . . .* Πυθαγόρᾳ, and the δὲ after *ἀπεφήνατο*, which are wanting in the excellent codex Ab, are not mentioned by the Greek commentators: they seem superfluous, and like an interpolation. Vide Brandis, *Gr. Röm. Phil.* i. 507 sq.; Gruppe, *Fragm. d. Arch.* 54 sqq.; Schwegler *in h. l.* Yet the first words of the writing of Alcmæon, in which he dedicates his work to Brotinus, Leo, and Bathyllus, prove that the date assigned is approximately correct. Vide next note, and Unna, p. 43; Krische, p. 70.

[1] This work, the beginning of which is given by Diog. *l. c.* after Favorinus, was entitled, according to Galen. (*in Hipp. de Elem.* t. i. 487; *in Hipp. De Nat. Hom.* xv. 5 K), περὶ φύσεως. Diog. and Clem. (Strom. i. 308 C) designate it also as φυσικὸς λόγος. But Clemens is wrong in asserting, as he does, Theodoret, *Cur. Gr. Aff.* 1, 19, Gaisf., that Alcmæon is the first who wrote on physics, for if even Xenophanes is not to be regarded as a Physicist, Anaximander, and Anaximenes (perhaps also Heracleitus), certainly wrote before Alcmæon. But, according to Clemens, even Anaxagoras had been mentioned as the first author of a physical treatise.

[2] According to Chalcid. (*in Tim.* c. 244, p. 233 Mull.), he was the first to make dissections, vide Unna, p. 55 sqq. As to his physiological opinions we learn from tradition the following particulars. He taught that the seat of the soul is in the brain (Plut. *Plac.* iv. 17, 1), to which all sensations are transmitted by means of the channels which lead from the organs of sense (Theophrast. *De Sensu*, section 26). How he sought to explain the different senses we are told by Theophrastus, *l. c.* 25 sq.; Plut. *Plac.* iv. 16, 2; 17, 1; 18, 1; vide the parallel passages in the Pseudo-Galen and Stobæus. For this reason the head is first formed in the embryo (*Plac.* v. 17, 3). The seed comes from the brain (*Plac.* v. 3, 3). Alcmæon occupied himself greatly with the subject of the embryo, how it is formed and how nourished (vide Censorinus, *loc. cit.* c. 5, 6; Plut. *Plac.* v. 14, 1, 16, 3). He compared puberty to the florescence of plants, and the milk of animals to the white of an egg (Arist. *H. Anim.* vii. 1, 581 a, 14; *Gener. Anim.* iii. 2, 752 b, 23). He explained sleep by the repletion of the blood-vessels, and waking by the emptying of them (Plut. *Pl.* v. 23, 1). He is also said to have believed that goats breathe through

not only of isolated astronomical[1] and ethical propositions,[2] but also of general philosophical theories which are very closely allied to those of the Pythagoreans. The leading point of view in these theories is, on the one hand, the opposition between the perfect or celestial, and the imperfect or terrestrial; and on the other, the spiritual affinity of man with the eternal. The heavens and the heavenly bodies are divine, because they uninterruptedly revolve in a motion that returns into itself;[3] the race of man, on the contrary, is

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their ears, Arist. *H. Anim.* i. 11, sub init. It is possible that Alcmæon may be referred to by Alex. (in Arist. *De Sensu*, ii. 12, p. 23, Thur.) in the statement that certain physicians shared the Pythagorean opinion, mentioned p. 475, 3; but this conjecture is uncertain. That of Hirzel (*Hermes*, xi. 240 sq.), on the contrary, seems admissible; he thinks that Plato was referring to Alcmæon, when in the *Phædo*, 96 B, he speaks of the opinion according to which *ὁ ἐγκέφαλός ἐστιν ὁ τὰς αἰσθήσεις παρέχων τοῦ ἀκούειν καὶ ὁρᾶν καὶ ὀσφραίνεσθαι, ἐκ τούτων δὲ γίγνοιτο μνήμη καὶ δόξα, ἐκ δὲ μνήμης καὶ δόξης λαβούσης τὸ ἠρεμεῖν κατὰ ταῦτα γίγνεσθαι ἐπιστήμην.* The distinction of *ἐπιστήμη* and *αἴσθησις* accords, as Hirzel well observes, with the text cited p. 524, 3. What is said at the commencement of this note agrees with the theory that the brain is the seat of the faculty of knowing; but Alcmæon (cf. p. 523, 3; 524, 2) must necessarily have regarded the soul alone as the knowing subject. We cannot, however, be sure that Plato did not add something of his own to the opinion which he reports; the derivation of *ἐπιστήμη* from *ἠρεμεῖν*—i.e., the fastening of ideas in the soul, repeated by Arist. *Anal. Post.* ii. 19, 100, a 3—is perhaps an addition of this kind; cf. *Crat.* 437 A; Meno, 97 E sq.

[1] According to Plut. *Plac.* ii. 16, 2; Stob. i. 516, he maintained that the fixed stars move from east to west; the planets (among which we must suppose the earth, which revolves around the central fire) from west to east. According to Stobæus, i. 526, 558, he attributed, like the Ionians, to the sun and moon a plane surface shaped like a boat, and explained eclipses of the moon by the shifting round of the lunar boat. Simpl. says (*De Cælo*, 121 a, Ald.) that he calculated the interval of time between the solstices and the equinoxes; but this is according to the ancient texts. Ap. Karsten, p. 223 a, 15, and Brandis, *Schol.* 500 a, 28, we find instead of *Ἀλκμαίωνι*, *Εὐκτήμονι*, which seems more exact.

[2] Clemens (*Strom.* viii. 624 B) cites the following from him: *ἐχθρὸν ἄνδρα ῥᾷον φυλάξασθαι ἢ φίλον.*

[3] Arist. *De An.* i. 2, 405 a, 30: *φησὶ γὰρ αὐτὴν [τὴν ψυχὴν]*

transitory, because we are not in a position to unite the beginning with the end—to begin a new course [1] after the expiration of our period of life. Our soul, however, is exempt from this transitoriness: it moves eternally, like the stars, and is therefore immortal.[2] So also its knowledge is not limited to the sense-perception—but it has also understanding and consciousness.[3] But everything human is on this account imperfect. The gods know what is hidden, we can only conjecture it: [4] they enjoy a uniform existence; our life moves between contraries,[5] and its healthfulness depends on the equi-

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ἀθάνατον εἶναι διὰ τὸ ἐοικέναι τοῖς ἀθανάτοις, τοῦτο δ' ὑπάρχειν αὐτῇ ὡς ἀεὶ κινουμένῃ· κινεῖσθαι γὰρ καὶ τὰ θεῖα πάντα συνεχῶς ἀεὶ, σελήνην, ἥλιον, τοὺς ἀστέρας, τὸν οὐρανὸν ὅλον. This text is doubtless the sole foundation for the assertion of the Epicurean, ap. Cic. *N. D.* i. 11, 27: *soli et lunae reliquisque sideribus animoque praeterea divinitatem dedit*, and of Diog. viii. 83: καὶ τὴν σελήνην καθόλου ταύτην (this passage seems to be mutilated; it may have originally stood thus: κ.τ.σ. καὶ ὅλον τὸν οὐρανὸν) ἔχειν ἀΐδιον φύσιν. Clem. *Cohort.* 44 A: 'Α. θεοὺς ᾤετο τοὺς ἀστέρας εἶναι ἐμψύχους ὄντας. Cf. the following note.

[1] Arist. *Probl.* xvii. 3, 916 a, 33: τοὺς γὰρ ἀνθρώπους φησὶν 'Αλκμαίων διὰ τοῦτο ἀπόλλυσθαι, ὅτι οὐ δύνανται τὴν ἀρχὴν τῷ τέλει προσάψαι. The sense of these words exactly determined by Philippson, 185; Unna, 71, is clear from the whole connexion of the passage.

[2] Arist. *l. c.* and, after him, Boethius, ap. Eus. *Pr. Ev.* xi. 28, 5; Diog. viii. 83; Stob. *Ecl.* i. 796; Theodoret, *Cur. gr. aff.* v. 17, and the Greek commentators of Aristotle, among whom Philoponus (in *De An.* i. 2 C, 8) expressly remarks that he is not acquainted with the writings of Alcmæon, and knows nothing of him except what Aristotle says.

[3] Theophr. *De Sensu*, 4, 25: τῶν δὲ μὴ τῷ ὁμοίῳ ποιούντων τὴν αἴσθησιν (as Empedocles did, vide *infra*) 'Αλκμαίων μὲν πρῶτον ἀφορίζει τὴν πρὸς τὰ ζῷα διαφοράν· ἄνθρωπον γάρ φησι τῶν ἄλλων διαφέρειν ὅτι μόνον (l. μόνος) ξυνίησι, τὰ δ' ἄλλα αἰσθάνεται μὲν οὐ ξυνίησι δέ.

[4] Alcm. ap. Diog. viii. 83: περὶ τῶν ἀφανέων [περὶ τῶν θνητῶν] σαφήνειαν μὲν θεοὶ ἔχοντι, ὡς δὲ ἀνθρώπους τεκμαίρεσθαι.

[5] Arist. *Metaph.* i. 5 (*sup.* p. 521, 2) continues: φησὶ γὰρ εἶναι δύο τὰ πολλὰ τῶν ἀνθρωπίνων, λέγων τὰς ἐναντιότητας οὐχ ὥσπερ οὗτοι διωρισμένας ἀλλὰ τὰς τυχούσας, οἷον λευκὸν μέλαν, γλυκὺ πικρὸν, ἀγαθὸν κακὸν, μικρὸν μέγα. οὗτος μὲν οὖν ἀδιορίστως ἐπέῤῥιψε περὶ τῶν λοιπῶν, οἱ δὲ Πυθαγόρειοι καὶ πόσαι καὶ τίνες αἱ ἐναντιότητες ἀπεφήναντο. Isoc. says wrongly: π. ἀντιδόσ. 268: 'Α. δὲ δύο μόνα (φησὶν εἶναι τὰ ὄντα).

librium of opposite forces; when, on the contrary, one of its elements gains a preponderance over the others, sickness and death are the result.[1] We certainly cannot consider Alcmæon a Pythagorean because of these propositions, for we find nothing about the number-theory, the distinctive doctrine of the Pythagorean system, in any of our accounts of him. Moreover, his astronomical opinions, mentioned above, only partially agree with the Pythagorean cosmology; and we must, therefore, hold Aristotle to be in the right when he discriminates him from the Pythagoreans. But the observations of Alcmæon on the relation of the eternal and the mortal, on the oppositions in the world, on the divinity of the stars, and the immortality of the soul, coincide in substance almost exactly with the Pythagorean doctrine. That a contemporary of the Pythagoreans, from their especial city Crotona, should have arrived at these theories independently of Pythagoreanism, is incredible. Although, therefore, Aristotle does not venture to decide whether the doctrine of opposites came from the Pythagoreans to Alcmæon, or *vice versâ*, the former alternative is much the more probable;[2] and we accordingly regard Alcmæon as a man who was considerably influenced by the Pythagorean philosophy, without having actually adopted it in its totality.

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[1] Plut. *Plac.* v. 30 (Stob. *Floril.* 101, 2; 100, 25): 'A. τῆς μὲν ὑγείας εἶναι συνεκτικὴν τὴν (so Stob.) ἰσονομίαν τῶν δυνάμεων, ὑγροῦ, θερμοῦ, ξηροῦ, ψυχροῦ, πικροῦ, γλυκέος καὶ τῶν λοιπῶν· τὴν δ' ἐν αὐτοῖς μοναρχίαν νόσου ποιητικήν· φθοροποιὸν γὰρ ἑκατέρου μοναρχία· καὶ νόσων αἰτία, ὡς μὲν ὑφ' ἧς, ὑπερβολὴ θερμότητος ἢ ψυχρότητος· ὡς δ' ἐξ ἧς, διὰ πλῆθος (Stob. wrongly: πληθ. τροφῆς) ἢ ἔνδειαν· ὡς δ' ἐν οἷς, αἷμα ἐνδέον (Stob. reads preferably: ἢ μυελὸν) ἢ ἐγκέφαλος (St.—ον). τὴν δὲ ὑγείαν σύμμετρον τῶν ποιῶν τὴν κρᾶσιν. (Stob. has: γίνεσθαι δέ ποτε καὶ ὑπὸ τῶν ἔξωθεν αἰτιῶν, ὑδάτων ποιῶν ἢ χώρας ἢ κόπων ἢ ἀνάγκης ἢ τῶν τούτοις παραπλησίων.) Plato, *Symp.* 106 D, puts the same thoughts into the mouth of his Eryxainachus. The mention of the four Aristotelian causes and of the Stoic ποιοί clearly shows that here we have not Alcmæon's own words.

[2] There is no question here of the Pythagorean table of the ten

Respecting Hippasus and Ecphantus our information is still more scanty. As to the former, the ancient writers themselves seem to have known no more than is to be found in Aristotle—namely, that, like Heracleitus, he held fire to be the primitive matter.[1] The farther statements, that he declared fire to be the Deity;[2] that he made derived things arise out of fire by rarefaction and condensation;[3] that he thought the soul was of a fiery nature;[4] that the world was limited and eternally moved, and subject to a periodic transformation:[5] all these must be mere inferences from the comparison of him with Heracleitus, since even the scholars of the Alexandrian epoch possessed no writing of his.[6] It was perhaps this approximation to the Heracleitean doctrine which made later writers call him a spurious Pythagorean, and the head of the so-called

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opposites, but only of the general principle that everything is full of opposites.

[1] Arist. *Metaph.* i. 3, 984 a, 7: Ἵππασος δὲ πῦρ [ἀρχὴν τίθησιν] ὁ Μεταποντῖνος καὶ Ἡράκλειτος ὁ Ἐφέσιος. The same is reproduced by Sext. *Pyrrh*, iii. 30; Clemens, *Strom.* i. 296 B; Theod. *Cur. gr. aff.* ii. 10, p. 22; Plut. *Plac.* i. 3, 25. What the last writer adds in regard to the metamorphoses of fire only applies to Heracleitus.

[2] Clem. *Cohort.* 42 C.

[3] Simpl. *Phys.* 6 a.

[4] Theodoret, *Cur. gr. aff.* v. 20; Tert. *De An.* c. 5.

[5] Diog. viii. 84; Simpl. *l. c.*; Theod. iv. 5, p. 58, where, however, instead of ἀκίνητον ἀεικίνητον is to be read.

[6] Diog. *l. c.* *φησὶ δ' αὐτὸν Δημήτριος ἐν Ὁμωνύμοις μηδὲν καταλιπεῖν σύγγραμμα.* Theo, *Mus.* c. 12, p. 91, mentions, but only as a report, the experiments of Lasos of Hermione und Hippasus (or his school) for determining the relations of tones. If Iambl. (*in Nicom. Arithm.* 141, 159, 163 Tennul) attributes to the mathematicians, Archytas and Hippasus, the distinction of arithmetical, geometrical and harmonic proportions, his assertion is not based on any writing of Hippasus.

Acusmatics;[1] elsewhere he is spoken of purely and simply as a Pythagorean,[2] and fragments of writings are adduced which were falsely attributed to him on this supposition.[3] If we enquire by what means he could have been led, as a Pythagorean, to the theory ascribed to him, it is most obvious to think of the doctrine of the central fire. According to the Pythagoreans, this fire was the germ of the universe, to which everything else had reference; and Hippasus seems for this reason to have regarded it as the matter of which all things consist. There is every probability, however, that he was also influenced by the example of Heracleitus, and that his theory thus resulted from a combination of the Pythagorean and Heracleitean doctrine.

Ecphantus occupies a similar position. He, too, is included among the Pythagoreans;[4] but their number-theory appears to have been too abstract and unphysical for him, and he therefore sought, like Hippasus, to complete it with the theories of later physicists; only that instead of Heracleitus, he chose the Atomistic philosophy and Anaxagoras, influenced perhaps by the Pythagorean derivation of space-magnitudes. He understood by the units, which are the original constituents of numbers, and furthermore of all things, material atoms, differing among themselves in size, form, and force. The proposition (which we must understand in the sense of the analogous sayings of Democritus[1]), that the essence of things cannot be known (that is, sensibly perceived), probably refers to the invisibility of these atoms. To the atoms he added the void—a conception already recognised in the ancient Pythagorean doctrine—but this did not appear to him sufficient as an explanation of phenomena, or else Pythagorean piety prevented his resting in it; he therefore assumed, with Anaxagoras, that the movement of the atoms and the shaping of the universe was produced by mind or the soul. On account of the unity of this moving cause, he preferred the ordinary notion of the unity and spherical shape of the world to the atomistic theory of many worlds.[2] All this, however, shows that he must have belonged to the latest generations of the Pythagoreans, with whom he is also identified by the statement that, in agreement with

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[1] Iambl. *V. Pyth.* 81. Similarly Villoison, *Anecd.* ii. 216. On the other hand, Iambl. (in Nicom. 11 b); Stob. *Ecl.* i. 862; and Syrian, *in Metaph.* xiii. 6, borrow even from his reputed writings testimonies concerning the Pythagorean doctrine.

[2] E. g. by Diog and Theo, *l. c.*

[3] Vide *sup.* p. 372, 1.

[4] Röth, ii. a, 812, with his usual recklessness, calls Ecphantus and Hicetas 'immediate disciples of Pythagoras.' Not only is this assertion entirely without proof; but it seems most probable, from the texts quoted on p. 491 sq., that both these philosophers lived after Philolaus, and at the same time as Archytas.

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[1] For further details, vide *infra.* Cf. for the present, Arist. *Metaph.* iv. 5; 1009 b, 11; *Δημόκριτός γέ φησιν, ἤτοι οὐδὲν εἶναι ἀληθὲς ἢ ἡμῖν γ' ἄδηλον.*

[2] The testimonies on which the above assertion is founded are as follows:—Stob. *Ecl.* i. 308 (*sup.*, p. 415, 1); *ibid.* 448: *Ἐκφ. ἐκ μὲν τῶν ἀτόμων συνεστάναι τὸν κόσμον, διοικεῖσθαι δὲ ὑπὸ προνοίας. Ibid.* 496: *Ἐκφ. ἕνα τὸν κόσμον.* Hippolyt. *Refut.* i. 15, p. 28: *Ἐκφαντός τις Συρακούσιος ἔφη μὴ εἶναι ἀληθινὴν τῶν ὄντων λαβεῖν γνῶσιν· ὁρίζει δὲ ὡς νομίζει τὰ μὲν πρῶτα ἀδιαίρετα εἶναι σώματα καὶ παραλλαγὰς αὐτῶν τρεῖς ὑπάρχειν, μέγεθος, σχῆμα, δύναμιν, ἐξ ὧν τὰ αἰσθητὰ γίνεσθαι. εἶναι δὲ τὸ πλῆθος αὐτῶν ὡρισμένον καὶ τοῦτο* [l. *καὶ οὐκ*] *ἄπειρον. κινεῖσθαι δὲ τὰ σώματα μήτε ὑπὸ βάρους μήτε πληγῆς, ἀλλ' ὑπὸ θείας δυνάμεως, ἣν νοῦν καὶ ψυχὴν προσαγορεύει. τοῦ μὲν οὖν τὸν κόσμον εἰδέναι ἰδεῖν* (or as Röper, *Philologus*, vii. 6, 20, happily conjectures: *τούτου μὲν οὖν τ. κόσμ. εἶναι ἰδέαν*). *δι' ὃ σφαιροειδῆ ὑπὸ μιᾶς δυνάμεως γεγονέναι* (this after Plato), *τὴν δὲ γῆν μέσον* (perhaps *ἐν μέσῳ*) *κόσμου κινεῖσθαι περὶ τὸ αὐτῆς κέντρον ὡς πρὸς ἀνατολήν.* Instead of the last three words (which, however, are not impossible) we might conjecture, the rest of the text being very incorrect: *ἀπὸ δύσεως πρὸς ἀνατολήν.*

Heracleides the Platonist (and with Hicetas), he believed the earth to rotate upon its axis.[1] He himself reminds us of Plato in some particulars.[2]

The celebrated comic poet Epicharmus[3] is called by many authors a Pythagorean.[4] It is not improbable that the Pythagorean doctrine had something more than a superficial influence on him, and that the inclination to general reflections and apophthegms, which may be perceived in the fragments of his works,[5] was fostered by it. But we are not justified by what we know of him, in supposing that he had any definite philosophical system. According to Diogenes III., 9 sqq., Alcimus[6] attempted to show that Plato borrowed great part of his doctrine from Epicharmus. His authorities are not only insufficient for this purpose, but fail to prove that Epicharmus was a philosopher at all in the proper sense. Of the four passages which he quotes,[7] the first[1] says that the gods are eternal, since the first being, had it become, must have arisen out of nothing; and that men are subject to continual change, and never remain the same.[2] Another passage says: As the art is something other than the artist, and as man only becomes an artist through learning the art, so the Good is something in itself (*τὶ πρᾶγμα καθ' αὐτὸ*),[3] and man becomes good by learning it. The third concludes from the instinct of animals that all living creatures possess reason.[4] The fourth observes that each creature delights most in itself; as man regards man as the most beautiful, so does the dog regard the dog, and the ox the ox, &c. These sayings certainly give evidence of a thinker, but they do not prove that the thoughts of the poet had their centre in any philosophic principle. Still less can we infer from them that this principle was that of the Pythagoreans; the remark about the eternity of the gods reminds us more of Xenophanes, to whose verses the fourth quotation also

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[1] Vide *sup.* p. 453, 1.

[2] Another trace of Pythagorean Atomistic doctrines may perhaps be found in what has been quoted p. 468, 1, concerning Xuthus.

[3] *Grysar. De Doriens Comœdia*, 84 sqq.; Leop. Schmidt, *Quaest. Epicharmeæ*, Bonn, 1846; Welcker, *Kleine Schrift.* i. 271–356; Lorenz, *L. und Schr. d. Koers Epicharmos*, Berl. 1864. The life of Epicharmus falls, according to Schmidt, between the 59th and the 79th Olympiad (556–460 B.C.). Grysar places his birth in the 60th Olympiad (540 B.C.), Lorenz, Ol. 60–62. All that we know with certainty is that he died shortly after Hiero, and therefore shortly after the year 467 B.C., at an advanced age. His age at his death was, according to Lucian (*Macrob.* 25), 97; according to Diog. viii. 78, 90. Born at Cos, he came while still a child to Megara in Sicily. The last half of his life was passed at Syracuse.

[4] Diog. viii. 78, calls him even a disciple of Pythagoras. Plut. *Numa*, 8; Clem. *Strom.* v. 597 C, at any rate, call him simply a Pythagorean. According to Iambl. *V. P.* 265, he belonged to the exoteric school. Schmidt, *Op. C.* p. 935, justly censures Lorenz, pp. 44–52, for giving unhesitating credence to the statement of Diogenes.

[5] Cf. Diog. *l. c.*: *οὗτος ὑπομνήματα καταλέλοιπεν ἐν οἷς φυσιολογεῖ, γνωμολογεῖ, ἰατρολογεῖ*, and dazu Welcker, p. 347 sq.

[6] Concerning Alcimus, vide the index to this work, p. 3.

[7] On the authenticity, text and interpretation, vide the dissertation

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of Schmidt, *Gött. Anz.* 1865, 940 sq.; Lorenz, 106 sq.; Bernays in *Rhein. Mus.* viii. 1853, 280 sq.; Steinhart (*Plato's Leben*, 13 sq., 264 sq.) says that the two first passages are certainly spurious, that the third is perhaps authentic, and the fourth undoubtedly so.

[1] A dialogue in which one of the interlocutors represents the Eleatic point of view, the other that of Heracleitus.

[2] Plato is perhaps thinking of this passage; at any rate he is thinking of the opinion expressed in it, when, in Theæt. 152 E, he places Epicharmus among those who maintain that there is no Being, but only Becoming. It is in the same text that Chrysippus (ap. Plut. *Comm. notit.* 44, p. 1083) finds the *λόγος αὐξανόμενος*.

[3] The conjecture of Schmidt (*Qu. Epich.* 49 sq.), according to which the verse containing this proposition should be rejected, seems to me unnecessary; it is not connected, any more than the others, with the theory of Ideas; the word *πρᾶγμα* is employed in the same sense as by Plato, *Prot.* 330 C sq.; 349 B.

[4] What Lorenz, p. 106, sees in this passage is not to be found there.

bears a striking analogy.[1] What is said about the vicissitude to which man is subject, alludes no doubt to the doctrine of Heracleitus,[2] from whom the theorem that the character of man is his dæmon[3] may likewise have been borrowed. The utterances of this poet concerning the state after death, on the other hand, indicate Pythagorean influence; the body, he says, returns to the earth, and the spirit to heaven;[4] a pious life is man's best preparation for the journey:[5] the proposition about the reason of animals in the third of the above quotations may have a like origin. All that we can further gather in regard to Epicharmus either has no definite philosophic character,[1] or else leaves us in uncertainty whether it emanates at all from him,[2] or was meant to express his own personal opinion.[3] On the whole we can clearly see that while Epicharmus was no stranger to the philosophy of his time, he was yet no exclusive adherent of any school,[1] but freely appropriated from the opinions of his contemporaries whatever seemed to him worthy of consideration.

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[1] Cf. *infra*, notes 4 and 6 on Xenophanes. That Epicharmus was acquainted with Xenophanes is proved by the passage of Arist. *Metaph.* iv. 5, 1010 a, 5 (after enumeration of the philosophers, who confound the sensible phenomenon with truth): *διὸ εἰκότως μὲν λέγουσιν οὐκ ἀληθῆ δὲ λέγουσιν. οὕτω γὰρ ἁρμόττει μᾶλλον εἰπεῖν, ἢ ὥσπερ Ἐπίχαρμος εἰς Ξενοφάνην. ἔτι δὲ πᾶσαν ὁρῶντες ταύτην κινουμένην τὴν φύσιν*, &c. What Epicharmus wrote about Xenophanes we cannot discover from this passage. The most natural conjecture is that he said of some opinion of this philosopher, that it might indeed be true, but that it was not probable. We have no reason to suppose from the passage that he wrote *against* Xenophanes; still less to conclude, with Lorenz, p. 122 sq., that Xenophanes attributed a certain value to the perceptions of sense, and, for that reason, was attacked by Epicharmus. Our text contains nothing of the sort. As to the arbitrary conjecture of Karsten (*Xenoph. Rell.* 186 sq., endorsed by Polman-Kruseman, *Epicharmi Fragm.* 118): *οὕτω γε ἁρμόττει μᾶλλον εἰπεῖν, ἢ ὥσπερ Ἐπίχαρμος ἢ Ξένοφ. εἶπον, πᾶσαν ὁρῶντες*, &c., it is contrary to the sense and to the context (cf. l. 10 sq.), and is rightly rejected by Schwegler (*ad h. l.*).

[2] Cf. p. 529, 5, and Bernays, *loc. cit.*

[3] Ap. Stob. *Floril.* 37, 16: *ὁ τρόπος ἀνθρώποισι δαίμων ἀγαθός, οἷς δὲ καὶ κακός.* Cf. Heraclit. *Fr.* 57 Schleierm.: *ἦθος γὰρ ἀνθρώπῳ δαίμων.*

[4] *Fragm. inc.* 23, from Clem. *Strom.* iv. 541 C: *εὐσεβὴς τὸν νοῦν πεφυκὼς οὐ πάθοις γ' οὐδὲν κακὸν κατθανών· ἄνω τὸ πνεῦμα διαμένει κατ' οὐρανόν.* *Fr.* 35 ap. Plut. *Consol. ad Apoll.* 15, p. 110: *καλῶς οὖν ὁ Ἐπίχαρμος, συνεκρίθη, φησὶ καὶ διεκρίθη καὶ ἀπῆλθεν ὅθεν ἦλθε πάλιν, γᾶ μὲν εἰς γὰν, πνεῦμα δ' ἄνω· τί τῶνδε χαλεπόν; οὐδὲ ἕν.*

[5] *Fr.* 46 in Boissonade *Anecd.* i. 125: *εὐσεβὴς βίος μέγιστον ἐφόδιον θνητοῖς ἔνι.*

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[1] E.g. *Fr.* 24 in Clem. *Strom.* v. 597 C: *οὐδὲν ἐκφεύγει τὸ θεῖον τοῦτο γινώσκειν σὲ δεῖ· αὐτὸς ἔσθ' ἁμῶν ἐπόπτας· ἀδυνατεῖ δ' οὐδὲν θεός.* *Fr.* 25 (*ibid.* vii. 714 A): *καθαρὸν ἂν τὸν νοῦν ἔχῃς ἅπαν τὸ σῶμα καθαρὸς εἶ.* Cf. the similar passage from an anonymous poet ap. Clem. *Strom.* iv. 531 C: *ἴσθι μὴ λουτρῷ ἀλλὰ νόῳ καθαρός*; the passage so often quoted, *νοῦς ὁρᾷ καὶ νοῦς ἀκούει τἄλλα κωφὰ καὶ τυφλά* (vide Polman-Kruseman, *l. c.* 82 sq.), which certainly contains nothing contradictory to the *οὖλος ὁρᾷ*, &c., of Xenophanes, as Welcker supposes *l. c.* p. 353; the famous saying: *οὐδεὶς ἑκὼν πονηρὸς* (*ibid.* p. 10 sq., cf. Arist. *Eth. N.* iii. 7, 1113 b, 14; Plato, *Tim.* 86 D), which, moreover (cf. p. 116, 1), really signifies that no one is voluntarily miserable; lastly, the assertion that Epicharmus called the stars and the elements gods (Menander ap. Stob. *Floril.* 91, 29).

[2] This holds good especially of the verses cited ap. Clem. *Strom.* v. 605 A, on the human and divine *λόγος*. For, according to Aristox. ap. Athen. xiv. 648 d, the work from which these verses are taken, the Polity, was foisted upon Epicharmus by a certain Chrysogonus; and Schmidt, *Qu. Epicharm.* 17, confirms this assertion on metrical grounds. It is probable that the commencement only of the work belongs to Chrysogonus, where we find Pythagorean ideas, *ὁ βίος ἀνθρώποις λογισμοῦ κἀριθμοῦ δεῖται πάνυ*, etc., the rest, on the contrary, from the words, *εἰ ἔστ' ἀνθρώπῳ λογισμὸς, ἔστι καὶ θεῖος λόγος*, looks very like a Jewish or Alexandrian Christian interpolation. The statement according to which (Vitruv. *De Archit.* viii. pref. 1) Epicharmus held that there were four elements, as Empedocles did, is evidently based upon an accidental juxtaposition, such as we find elsewhere (e.g. in Æschylus, *Prometh.* 88 sq.). This is not enough to justify our attributing to Epicharmus the idea of the elements as conceived by Empedocles. I know not what can have given rise to Lorenz's assertion that the fragments of the Epicharmus of Ennius must be reckoned among the most interesting writings that remain to us of this Epicharmus.

[3] For example, the doctrine of the flux of all things, professed by Heracleitus, is humorously interpreted by this poet to mean (as shown by Bernays, *l. c.* 286, from Plut. *De s. num. vind.* c. 15, p. 559) that a man need not pay his debts because he is not the identical person who incurred them. It is perhaps the same with the passage in Cic. *Tusc.* i. 8, 15: *Emori nolo sed me esse mortuum nihil æstimo* (Sext. *Math.* i. 273, has incorrectly, no doubt, *ἀποθανεῖν ἢ τεθνάναι οὔμοι διαφέρει*). This last proposition, at any rate, seems to accord very ill with the Pythagorean belief in immortality. Welcker, *l. c.* 304 sq., well remarks (and Grono-

THE ELEATICS.

I. SOURCES. THE TREATISE ON MELISSUS, XENOPHANES, AND GORGIAS.

THE works of the Eleatic philosophers have only been handed down to us in isolated fragments.[2] Beside these, the statements of Aristotle are our principal source of information in regard to their doctrines. Then come the supplementary accounts of more recent authors, among whom Simplicius, through his personal knowledge of the Eleatic writings, and his careful employment of ancient authorities, ranks first. Full of lacunæ as all these sources are, they yet contain too much; and this superabundance has, at least in respect to the founder of the school, been more prejudicial to a correct estimate of the Eleatic doctrines than the scarcity of original documents. We possess a treatise,[3] under the

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vius and Lobeck agree) that the stars, wind, &c., are called gods by Epicharmus, not in his own name, but when he is expounding the Persian religion.

[1] Perhaps this is the reason why Iambl., *V. P.* 266, reckons him among the exoteric members of the school; but it may also be because later writers found him deficient in what they considered true Pythagoreanism.

[2] Those of Xenophanes, Parmenides, and Melissus have been collected and annotated by Brandis (*Comment. Eleat.*); those of Xenophanes and Parmenides by Karsten, *Philosophorum Græc. Reliq.* They are given with a short commentary by Mullach in his edition of the treatise, *De Melisso*, etc.; and in the *Fragm. Philos. Gr.* i. 99 sqq.; 259 sqq.

[3] According to the usual title, *De Xenophane, Zenone et Gorgia*; Mullach in his edition, repeated *Fragm.* i. 271 sqq., substitutes for this, *De Melisso, Xenophane et Gorgia.* On the text, authenticity, and contents of this work, cf. F.

name of Aristotle, which expounds and criticises the doctrines of two Eleatic philosophers, and the similar arguments of Gorgias. But who these two philosophers are, and what is the historical value of the treatise, there is no certain evidence to show. The greater number of texts give the title of the work thus: 'Concerning Xenophanes, Zeno and Gorgias.' Others have only the more general title, 'Concerning the opinions,' or 'Concerning the opinions of the philosophers.' Of the particular divisions of this work, the first section (c. 1, 2) is usually thought to relate to Xenophanes; but in some of the manuscripts, and especially in the Leipzig Codex, which is the best, to Zeno: while the second section (c. 3, 4), to which the name of Zeno is most frequently attached, is referred by the same authorities to Xenophanes.[1] There can be no doubt, however, that the first section treats neither of Xenophanes nor of Zeno, but of Melissus. This is clearly asserted[2] in the work itself, and the contents are of such a nature that they can relate to no other person. For as we learn from the express testimony of Aristotle,[3] it was Melissus who first maintained the unlimitedness of the One Being (c. i. 974 a, 9), whereas

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Kern: *Quæstionum Xenophanearum capita duo*. Naumb. 1864. *Symbolæ criticæ ad libell. Arisiot.* π. Ξενοφ. etc., Oldenb. 1867. Θεοφράστου π. Μελίσσου *Philologus*, vol. xxvi. 271 sqq.; *Beitrag z. Darst. d. Philosophie d. Xenoph.* Danzig, 1871. *Ueber Xenophanes v. Kol.* Stettin, 1874.

[1] Cf. the proofs in Bekker and Mullach.

[2] C 4, 977 b, 21; cf. c 1, sub init. and 974 b, 20, c. 2, 975 a, 21; c. 6, 979 b, 21; cf. c. 1, 974 a, 11 b, 8. In c. 2, 976 a, 32 a clear distinction is drawn between the philosopher whose doctrine had been expounded in the chapter, and Xenophanes; and c. 5, 979 a, 22 presupposes that Melissus has previously been spoken of.

[3] *Metaph.* i. 5, 986 b, 18; cf. *Phys.* iii. 5, 207 a, 15.

Xenophanes gave no opinion on this question, and the reasons which are here, according to the ordinary theory, placed in the mouth either of Xenophanes or Zeno, belong, according to the undoubtedly authentic statements of Aristotle, and the fragments of Melissus which Simplicius has preserved, to Melissus.[1] For the rest, this harmony with ancient testimony serves to ratify the contents of this chapter, if we connect it with Melissus; and there seems no alternative in that case but to suppose a wrong title. In the second section, on the contrary, not only the person to whom it relates, but also the credibility of the contents, is questionable. The various texts, as we have seen, connect it sometimes with Zeno,[2] sometimes with Xenophanes. The author himself subsequently alludes to communications concerning Zeno, which we might suppose to be contained in the third chapter: but his allusions are much more explicable on the theory that a part of the work which is now lost related to Zeno; and this would agree with the fact that in the chapter before us Zeno is brought forward in a manner that would be impossible[1] if the context directly treated of him. Ought

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[1] As has been shown by Brandis (*Comment. Eleat.* 186 sqq., 200 sq.; *Gr. Röm. Philos.* i. 398 sqq.), and previously by Spalding (*Vindiciæ Philosoph. Megaricorum Subjecto Commentario in priorem parti libelli de Xenoph. Zenone, et Gorgia*, Berlin, 1793). Our discussion on Melissus later on will also make it clear. Röth, *Geschicht. d. Abendl. Phil.* ii. b, 28, sees not the smallest reason to refer c. 1 sq. to Melissus. This was to be expected, since he (*ibid.* a, 186) contemptuously dismisses all doubt as to the authenticity of the work; but it does not alter the state of the case. His detailed examination of Xenophanes also (*l. c.* a, 174–242 b, 22–42) contains scarcely anything which is either not already known, or which is tenable. His chief discovery (a, 188, 216, &c.) that Xenophanes developed his opinions in persistent opposition to those of Anaximander, and formed his theory of God especially, with constant reference to Anaximander's 'viereinigen' conception of God—apart from its want of any historical foundation—is inadmissible, since it starts from wholly arbitrary and wrong notions of Anaximander. We cannot, however, hope for much aid in the comprehension of the writing attributed to Aristotle, from a commentary which can so deal with its text, as to find (p. 208) in the proposition that 'nothing is nowhere' (that is, in no space) the identity of infinite space with nothing.

[2] In the chapter on Gorgias (c. 5, 979, a, 21) we read: ὅτι οὐκ ἔστιν οὔτε ἓν οὔτε πολλὰ, οὔτε ἀγέννητα οὔτε γενόμενα, τὰ μὲν ὡς Μέλισσος τὰ δ' ὡς Ζήνων ἐπιχειρεῖ δεικνύειν μετὰ τὴν ἴδιον αὐτοῦ ἀπόδειξιν, etc.; c. 6, 979 b, 25: μηδαμοῦ δὲ ὂν οὐδὲν εἶναι (sc. Γοργίας λαμβάνει) κατὰ τὸν Ζήνωνος λόγον περὶ τῆς χώρας; *ibid.* line 36, ac-

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cording to Müllach's continuation: *τὸ γὰρ ἀσώματόν, φησιν, οὐδὲν, ἔχων γνώμην παραπλησίαν τῷ τοῦ Ζήνωνος λόγῳ.* That other demonstrations of Zeno are here meant, which are not spoken of in our treatise, I cannot believe. With what right could the author assume in readers who had been first instructed by himself concerning the opinions of Melissus and Xenophanes—such intimate acquaintance with the doctrines of Zeno, that he might thus refer to them, as to something they knew perfectly well? Were there no better solution, I should prefer to admit the possibility (as in the first editions of this work) that these allusions refer to passages in the second section, and, therefore, not to Xenophanes but to Zeno. The passage from c. 5 would then (with c. 1, 974 a, 2, 11) have to be referred to c. 3, where the unity and eternity of God are proved. Our author indeed says that Gorgias partly follows Zeno and partly Melissus, in proving that Being is neither one nor many, neither become nor unbecome. But this is no obstacle; for neither Zeno nor Melissus can have advanced arguments *against* the unity and eternity of Being. Gorgias, therefore, could only have employed their demonstrations in support of the thesis that Being is not a Plurality and not become; not to prove that Being is not a Unity and not underived. Consequently if even the words of our author assert the latter doctrine, he must certainly be expressing his meaning inaccurately. (The objection of Kern, *Qu. Xen.* 42 to this opinion is irrelevant, and is directed against an interpretation of the passage for which I am not responsible.) The passages from c. 6 might be referred to c. 3, 977 b, 13: *τὸ γὰρ μὴ ὂν οὐδαμῇ εἶναι*; these words, however, would not be sufficient to explain the allusions, even if we call to our assistance the fundamental proposition (*ibid. l.* 5): *οἷον τὸ μὴ ὂν οὐκ ἂν εἶναι τὸ ὄν.* It seems to me more likely that the passages cited from c. 5 sq. allude to a lost portion of this work, which treated of Zeno. Perhaps c. 2, 976 a, 25, also refers to this lost portion. In Diog. v. 25, a book, *πρὸς τὰ Ζήνωνος*, is actually mentioned among the writings of Aristotle, together with the treatises on Melissus, Gorgias and Xenophanes.

[1] In his criticism (c. 4, 978 b, 37) of the opinions expounded in c. 3, the reply which the author makes to the assertion (977 b, 11 sqq.) that the Deity cannot move,

we then to infer that the author is alluding in this section, not to Zeno, but to Xenophanes? In that case it is somewhat strange that in an exposition of the Eleatic doctrine the founder of the school should occupy a place between Melissus and Gorgias. This, however, may be explained on the hypothesis that the order in which the writer discusses the Eleatic philosophers is regulated, not according to their historical connection, but

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because all motion presupposes a plurality of things, of which one moves into the other (i.e. the place of the other), is as follows. The Deity also could move into another *οὐδαμῶς γὰρ λέγει ὅτι ἓν μόνον* (so Kern, *Quæst.* 35, completes the text), *ἀλλ' ὅτι εἷς μόνος θεὸς εἰ δὲ καὶ αὐτὸς* (instead of this we should probably read with Bergk, *De Arist. lib. de Xen. Zen. et Gorg.* Marb. 1843, p. 36 sq.) *εἰ δὲ καὶ μὴ αὐτὸς*, if even he himself does not move into another—other conjectural reading, in Kern, *l. c.* *τί κωλύει εἰς ἄλληλα κινουμένων τῶν μερῶν τοῦ . . . κύκλῳ φε . . . θεὸν* (here might be read: *τ. μ. τοῦ παντὸς* [or *τοῦ ὅλου*] *κύκλῳ φέρεσθαι τὸν θεόν*. Kern, on account of Felician's translation, *quid vetat partes omnia ambientis Dei in sese mutuo moveri*, conjectures: *τ. μ. τοῦ πάντα περιέχοντος θεοῦ*; but this translation, if it be literal, would necessitate a great alteration in the text; if it be not so, *ambientis* may be referred to the *κύκλῳ*, which is not otherwise translated) *οὐ γὰρ δὴ τὸ τοιοῦτον*, the *ἓν ὥσπερ ὁ Ζήνων πολλὰ εἶναι φήσει*. (So in Cod. Lips. and elsewhere, the Vulgata is *φύσει*) *αὐτὸς γὰρ σῶμα εἶναι λέγει τὸν θεόν*, etc. In the second edition of this work I objected to the words, *ὥσπερ ὁ Ζήνων*, because the assertion that the one would become a multiplicity if it changed its place (and this assertion can alone be in question here: the *τοιοῦτον ἓν* would be the *κύκλῳ φερόμενος θεὸς*) is to be found in the extract from Melissus, c. 1, 974 a, 18 sqq., and is nowhere (not even ap. Themist. *Phys.* 18 o, p. 122 Sp.) attributed to Zeno. I conjectured, therefore, that *ὥσπερ* ought to be rejected; or *Μέλισσος* substituted for *Ζήνων*; or still more probably, as it seemed to me, that the words *ὥσπερ ὁ Ζήνων*, which certainly relate to an earlier passage of the book, had been added by the person who referred c. 1 to Zeno. If, however, the work originally contained a discussion on Zeno (vide previous note), the conjecture is superfluous. The words would then relate to that discussion. The particular meaning of the words is immaterial in regard to the present enquiry. Meantime I see no reason to abandon my former explanation, according to which the words *οὐ γὰρ*, etc., assert the following: 'for our adversary cannot object, like Zeno, that such a One revolving in a circle would not be One at all (more correctly *is* not, for there is no *ἂν* before *εἶναι*), for he himself calls the Deity spherical.'

from a dogmatic point of view. Just as in a famous passage of the Metaphysics, Aristotle mentions Parmenides first, then Melissus, and after them Xenophanes;[1] so, in this work, the author deals first with those Eleatics who maintain that Being is limited—viz., Zeno, and no doubt Parmenides;[2] next with Melissus, who also maintains that it is unlimited; next with Xenophanes, who says that it is neither limited nor unlimited; and, lastly, with Gorgias, who not only denies that Being is cognisable, but also denies Being itself. But if this destroys the theory that Zeno is the philosopher indicated in the third chapter,[3] still less can we discover in the exposition any accurate account of his doctrines.[4] The philosopher here mentioned is represented as having denied Becoming and Multiplicity, '*in reference to the Divinity*,'[5] and he is accordingly made to develope the proof of his assertion primarily in relation to this alone, although his reasons for the most part admit of a more general application. No such restriction of Zeno's doctrines is recognised by any of the ancient accounts: they all agree that Zeno, like Parmenides, denied Becoming and Multiplicity in general. Xenophanes alone, as we shall see, connected his whole polemic against the ordinary point of view with the theological question; whereas, with the exception of what we find in the treatise we are considering, not a single theological proposition has been handed down to us as Zeno's. Although, therefore, it is quite conceivable that Zeno may have called the One Being also God, yet it is not probable that in his demonstration he limited himself to proving that *the Deity* is eternal, sole, &c. On the contrary, what he aimed at was to show generally that Plurality and Becoming are nowhere possible.[1] Our text consequently maintains, in respect of the Eleatic philosopher it discusses, that which could only be said of Xenophanes; and the further development of his propositions is connected with Xenophanes in a manner which we cannot assume in the case of Zeno.[2] It is true that Parmenides and Melissus attribute to Being the same unity, uniformity, and immobility, that Xenophanes does to God. But the fact that they attribute these qualities not to God, but to Being, shows most clearly how great was the advance from Xenophanes to Parmenides. There is no doubt that Zeno strictly adhered to the doctrine of Parmenides. That he should have abandoned the metaphysical view of the fundamental doctrine of the Eleatics, wherein the chief merit of Parmenides consists, and should have gone back to the more imperfect theological view, is not probable. But the manner in which the Deity is here spoken of is no less surprising. It is described as neither limited nor unlimited, neither moved nor unmoved; but although it is without limit, it is said to be spherical in form. How is this possible? In his critique of ordinary opinion, Zeno regards as a sufficient proof of its falsity the fact that it attributes opposite predicates to the same things at the same time.[1] Is it likely then that he himself would have attributed such mutually exclusive predicates to the Deity? Ueberweg thinks that he did not intend to attribute them, but to deny them, in order thus to exalt the Deity above the whole sphere of extension and temporality.[2] But this inten-

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[1] Vide *infra*, p. 547, 1.

[2] Philoponus, *Phys.* B, 9, is the only authority who says that there existed a treatise on Parmenides attributed to Aristotle: φασὶ δὲ καὶ γεγάφθαι αὐτῷ ἰδίᾳ βιβλίον πρὸς τὴν Παρμενίδου δόξαν. The statement, however, has much in its favour, as it is scarcely credible that any one who treated of the Eleatics would pass over Parmenides. If we accept it as true, we might refer c. 2, 976 a, 5; c. 4, 978 b, 8 of our treatise to this portion of the work. Only it must have been lost at a very early period, for it is not mentioned in the catalogue of Diogenes.

[3] Cf. Fries. *Gesch. d. Phil.* i. 157 sq. 167; Marbach, *Gesch. d. Phil.* i. 145 sq.; Schleiermacher, *Gesch. d. Phil.* 61 sq.; Ueberweg, vide next note, and see also the first edition of the present work.

[4] This is presupposed by Fries and Marbach. Schleiermacher *l. c.* says more cautiously that we have here the opinions of Zeno expressed in the language of Xenophanes, and that the whole is merely patched together. More recently Ueberweg, *Ueber d. histor. Werth der Schrift De Melisso*, &c. (*Philologus*, viii. 104 sqq.) tried to establish the above-named theory more firmly. Eventually, however, he altered his opinion on the subject, and declared that the author was probably treating of Xenophanes, but gave no trustworthy information either of him or of Zeno (*Grundriss*, i. section 17). As he expressly alludes to my counter-remarks, I cannot well omit them in the present edition.

[5] τοῦτο λέγων ἐπὶ τοῦ θεοῦ, c. 3, *sub init.*

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[1] As Plato says, *Parm.* 127 C sqq.

[2] In the passage *Dc Mel.* c. 3, 977 a, 36, we find this statement: *ἕνα δ' ὄντα* [*τὸν θεὸν*] *ὅμοιον εἶναι πάντῃ, ὁρᾶν τε καὶ ἀκούειν τάς τε ἄλλας αἰσθήσεις ἔχοντα πάντῃ*, a manifest imitation of Xenophanes (*Fr.* 2): *οὖλος ὁρᾷ, οὖλος δὲ νοεῖ, οὖλος δέ τ' ἀκούει.* Cf. p. 454, 2; 457, 3; 3rd ed.; also, 977 b, 11: The Deity is not moved, *κινεῖσθαι δὲ τὰ πλείω ὄντα ἑνὸς, ἕτερον, γὰρ εἰς ἕτερον δεῖν κινεῖσθαι.* Cf. *Xenoph. Fr.* 4 (according to Karsten's amendments): *αἰεὶ δ' ἐν ταὐτῷ τε μένειν κινούμενον οὐδὲν οὐδὲ μετέρχεσθαί μιν ἐπιπρέπει ἄλλοτε ἄλλῃ.* Further, what relates to the proof of the unity of God, 977 a, 23 sqq., is quite in accordance with what Plut. (ap. Eus. *Pr. Ev.* i. 8, 5) says of Xenophanes: *ἀποφαίνεται δὲ καὶ περὶ θεῶν ὡς οὐδεμιᾶς ἡγεμονίας ἐν αὐτοῖς οὔσης· οὐ γὰρ ὅσιον δεσπόζεσθαί τινα θεῶν*, for Xenophanes could only draw from it the conclusion he did, on the

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supposition that he did not hold a plurality of gods. That the Deity is underived, was also first declared by Xenophanes. Lastly, the statement that the Deity is neither limited nor unlimited, neither moved nor unmoved, must be regarded as a misapprehension of the utterances of Aristotle, and of Theophrastus concerning Xenophanes; it must, however, be connected with Xenophanes and not with Zeno, who, as far as we know, gave no opening for such a statement.

[1] Plato, *loc. cit.*, other authorities will be cited *infra*.

[2] Similarly, on the supposition that we have here a true report of Xenophanes, cf. Kern, *Qu. Xen.*

tion is so little shown by our Eleatic philosopher, that he expressly describes the Deity as globe-shaped; the historical Zeno, moreover, denies all reality to that which is not extended.[1] It is incredible that Zeno should have maintained these theories of his master, if the idea of God being uncontained in space were admitted by him; and still more incredible is it that so acute a thinker should have believed in the spherical form, while he denied the limitation of the Deity. Internal contradictions can be discovered in Zeno as in other philosophers, but they can be recognised as contradictions only by means of inferences which he did not himself draw. There is no example in his doctrines of so palpable and direct a combination of what is contradictory, as this work imputes to him.[2]

Nor is this work a trustworthy authority for the doctrines of Xenophanes. A guarantee for the authenticity of its exposition is indeed supposed[3] to be found

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11 sqq. But Kern has since (*Beitrag*, 17) considerably modified this opinion. Vide *infra*, p. 548, 1.

[1] Cf. the following note. Further details in the chapter on Zeno.

[2] Ueberweg says that Zeno, according to Themist. *Phys.* 18 a (122 sq.), and Simpl. *Phys.* 30 a, declared the Real to be indivisible and extended, and yet, according to Arist. *Metaph.* iii. 4. 1001 b, 7, maintained that the One could not be indivisible, for if it were so, it would not be a quantity, and consequently would be nothing. But Aristotle does not say that Zeno actually asserted this; he only says that from the presupposition of Zeno, 'that which, being added to another, does not increase that other, and being taken from another, does not make that other less, is nothing;' *it would follow* that the One must be a quantity, and therefore not indivisible. This is undoubtedly the meaning of the Aristotelian passage, as is clear not only from the words themselves, but from what Simplicius adduces, *l. c.* p. 21. The expression quoted by Themistius would be irrelevant here, for it relates to the many and not to the One. Cf. p. 498, 1, 3rd ed.

[3] This holds good of the ancient writers without exception; also of Steinhart, *Pl. W. W.* iii. 394, 10, and Mullach, *Præf.* xiv. (*Fragm. Philos. Gr.* i. 271 sqq., where the Præfatio of the year 1845 is

in Theophrastus, from whom the similar statements of Simplicius and Bessarion as to Xenophanes are said to be borrowed. But this theory is very improbable. Bessarion [1] was unmistakeably quoting, not from some writing of Theophrastus now lost, but solely and entirely from the passage in Simplicius' Physics, in which that commentator, appealing to Theophrastus, expounds the doctrine of Xenophanes in harmony with the third chapter of our treatise.[2] Simplicius, however, is not indebted to Theophrastus for *all* that he says about

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printed without alteration), though he doubts the authenticity and entire credibility of this treatise. Kern, *Beitr.* 2; *Xenoph.* 8; cf. *Qu. Xen.* 48 sq., derives the statement of Simplicius from the Physics of Theophrastus. and accounts for its similarity with our writing, by conjecturing the latter to have been a sketch of Theophrastus, which he himself used for that particular passage in the Physics.

[1] *C. Calumniat. Plat.* ii. 11, p. 32 b (printed in Brandis, *Comm. El.* 17 sq.; Mullach, p. xi. of his separate edition, i. 274 *Fragmenta*; Kern. *Qu.* 44 sq.): [*Theophrastus*] *Xenophanem, quem Parmenides audivit atque secutus est, nequaquam inter physicos numerandum sed alio loco constituendum censet. Nomine, inquit, unius et universi Deum Xenophanes appellavit, quod unum ingenitum immobile aeternum dixit; ad haec, aliquo quidem modo, neque infinitum neque finitum, alio vero modo etiam finitum, tum etiam conglobatum, diversa scilicet notitiae ratione, mentem etiam universum hoc idem esse affirmavit*

[2] Kern, *Qu. Xen.* 44 sqq. (in agreement with Brandis, *l. c.*, Karsten, *Xenoph. Rell.* 107, and others), has indeed sought to prove the contrary, in opposition to Krische, *Forsch.* 92 sq., and myself; but he has now withdrawn this opinion (*Beitr.* 6 *Anm.*). Bessarion's account of Xenophanes really contains nothing that might not have been taken from Simplicius, only that Bessarion seems to have been careless in the use of his authority. Even what he adds immediately after the words quoted above can only have come from Simplicius (*l. c.* and p. 7 b, 15 b), though he reproduces his statements very inaccurately when he says: *Nec vero Theophrastus solus haec dixit; sed Nicolaus quoque Damascenus et Alexander Aphrodisiensis eadem de Xenophane referunt* (for the real state of the case, cf. p. 549, 1), *opusque Melissi de ente et natura inscriptum dicunt* (this is said only by Simplicius, 15 b). *Parmenidis de veritate et opinatione* (this is said neither by Simplicius, nor the others; but Simplicius does say, 7, 6: μετελθὼν . . . ὁ Παρμενίδης . . . ἀπὸ ἀληθείας, ὥς αὐτός φησιν, ἐπὶ δόξαν). In the same way as Kern has already shown, *Qu.* 47, the foregoing is merely a reproduction of Simpl. *Phys.* 7.

Xenophanes, but only for an introductory remark, which tells us nothing more than we find in Aristotle's Metaphysics.[1] The rest he brings forward in his own name, without saying whence he derives it;[1] but his mode of expression shows[2] that it was not from the same source (namely, the Physics of Theophrastus) as the more general quotation. The source, it is evident from

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[1] His words are, *Phys.* 5 b: *μίαν δὲ τὴν ἀρχὴν ἤτοι ἓν τὸ ὂν καὶ πᾶν, καὶ οὔτε πεπερασμένον οὔτε ἄπειρον, οὔτε κινούμενον οὔτε ἠρεμοῦν, Ξενοφάνην τὸν Κολοφώνιον τὸν Παρμενίδου διδάσκαλον ὑποτίθεσθαί φησιν ὁ Θεόφραστος, ὁμολογῶν ἑτέρας εἶναι μᾶλλον ἢ τῆς περὶ φύσεως ἱστορίας τὴν μνήμην τῆς τούτου δόξης.* These words may easily be taken to mean nothing more than what Aristotle says, *Metaph.* i. 5, 986 b, 21: Xenophanes never announced whether he conceived the One primitive essence as limited or unlimited; Theophrastus adds that he also never explained whether he conceived it as at rest or in motion. Nothing obliges us to conclude from these statements that Xenophanes expressly taught that the One was neither limited nor unlimited, neither at rest nor in motion. This is certainly asserted by the treatise, *De Melisso.* Simplicius, in putting the statement of Theophrastus into the third person, may have condensed it or altered it: this is not at all unlikely. But even supposing Theophrastus really to have written, *μίαν δὲ τὴν ἀρχὴν . . . ἠρεμοῦν Ξ. ὁ Κολοφώνιος ὁ Παρμενίδου διδάσκαλος ὑποτίθεται,* I do not see what hinders us from translating it thus: ‘Xenophanes regards the principle as One, i.e. he regards the totality of Being as One; and neither as something limited nor unlimited, neither as something moved nor unmoved.’ The objection of Kern, *Qu.* x. 50; *Beitr.* 4, 6: that because the verbal conception is not denied it must be explained thus: ‘He considers the *ὂν καὶ πᾶν* as neither limited nor unlimited,’ I confess I do not understand. In the sentence, *οὔτε πεπερασμένον οὔτε ἄπειρον ὑποτίθεται*, the negation may as well refer to the *ὑποτίθεται* as to the *πεπερασμ.* and the *ἄπειρον*; it may either mean, ‘He conceives it neither as limited nor unlimited;’ or, ‘he conceives it as neither limited nor unlimited.’ It must mean the former, unless Theophrastus is to contradict the statement of Aristotle (vide p. 547, 1). This is highly improbable, for Theophrastus, in the very chapter on Physics from which our fragment is taken, is in close agreement with the first book of Aristotle's Metaphysics. Vide his observations on Parmenides and Anaxagoras (*infra*, § *Parm.*, and *supra*, p. 233, 1), compared with Arist. *Metaph.* i. 5, 986 b, 18 sqq.; c. 8, 989 a, 30 sqq., and his *Fr.* 48 (ap. Simpl. *Phys.* 6 b); cf. Arist. *Metaph.* i. 6 *sub init.* It cannot be urged that, because Xenophanes (in *Fr.* 4, quoted p. 539, 2), declared God to be unmoved, he never could have been said to have withheld his opinion as to the movement of the *ὂν καὶ πᾶν*. Xenophanes, in Fr. 4, is combating the mythical notions about the wanderings of the gods, such as those of Zeus and Poseidon to Æthiopia, and maintains as his opinion that the Deity remains unmoved, *ἐν ταὐτῷ*; whether the world, the *ὂν καὶ πᾶν* is also unmoved, he does not say. It appears from other accounts, however, that he was far from denying movement to the

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world, and consequently we have no right to apply to the world what he says of God (*l. c.*). If it be so applied, however, Kern's explanation of the passage in Theophrastus is excluded as well as mine. For, if Xenophanes had said that the πᾶν remained unmoved, and for ever in the same place, or in other words, that it was not moved, but at rest; in that case no one could have said that Xenophanes declared it to be neither unmoved nor at rest.

[1] Simplicius proceeds immediately after δόξης with the direct narration, τὸ γὰρ ἓν τοῦτο καὶ πᾶν, &c. p. 475. Although it does not follow that that which comes next cannot have been borrowed from Theophrastus, it is the more certain, that the exposition of Simpl. does not justify us in asserting that it *was* borrowed from him.

[2] It clearly results from the addition, ὁμολογῶν, &c. (p. 541, 3). that the previous citation is taken from Theophrastus, φυσικὴ ἱστορία, which, we know from other sources, contained mention of Xenophanes and Parmenides, and of most of the ancient philosophers, vide Diog. ix. 22; Stob. *Ecl.* i. 522; Alex. Aphr. *in Metaph.* i. 3, 984 b, 1, p. 24 Bon; Simpl. *Phys.* 25 a, etc.; in this treatise, however, according to his own declaration, Theophrastus cannot have spoken very fully of Xenophanes. Kern (*Beitr.* 3) says that Theophrastus may have had a reason for his criticism, and subsequent omission of the philosophy of Xenophanes in his Physics in his having given a short exposition of it to his readers. But such a procedure seems to me improbable, and the analogies which Kern (*l. c.*) adduces from Aristotle, irrelevant. It may be thought (Brandis, *Comm. El.* 17; Kern, *Quæst.* 50; *Beitr.* 2) that Simplicius would have said the same, even if his further statements had not been founded upon Theophrastus. But it might rather be expected that he would somewhere have indicated it, if he had found the same in Theophrastus. He only says, however, that Theophrastus in his Physics declined the discussion of Xenophanes' philosophy. Kern thinks that the agreement of the account of Xenophanes (τὸ γὰρ ἕν, etc.), with the words previously quoted from Theophrastus, is incomprehensible if this account be not taken from Theophrastus. But the question is whether the words are to be understood in the same sense as this account. Kern lastly remarks: Simplicius not only names Theophrastus before the discussion concerning Xenophanes; but he names Nicolaus and Alexander after it. I know not what this remark is intended to show. He names his sources where he intends to support his opinion upon their evidence. But it does not follow that he supports his opinion on their evidence when he does not mention them.

the similarity both of the ideas and the language[1] in the two expositions, can be no other than the work on

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[1] Cf. the two texts, *Simpl.*: τὸ γὰρ ἓν τοῦτο καὶ πᾶν τὸν θεὸν ἔλεγεν ὁ Ξενοφάνης, ὃν ἕνα μὲν δείκνυσιν ἐκ τοῦ πάντων κράτιστον εἶναι πλειόνων γάρ, φησιν, ὄντων, ὁμοίως ἀνάγκη ὑπάρχειν πᾶσι τὸ κρατεῖν· τὸ δὲ πάντων κράτιστον καὶ ἄριστον ὁ θεός. ἀγένητον δὲ ἐδείκνυεν ἐκ τοῦ δεῖν τὸ γιγνόμενον ἢ ἐξ ὁμοίου ἢ ἐξ ἀνομοίου γίγνεσθαι· ἀλλὰ τὸ μὲν ὅμοιον ἀπαθές φησιν ὑπὸ τοῦ ὁμοίου· οὐδὲν γὰρ μᾶλλον γεννᾷν ἢ γεννᾶσθαι προσήκει τὸ ὅμοιον ἐκ τοῦ ὁμοίου· εἰ δ' ἐξ ἀνομοίου γίγνοιτο, ἔσται τὸ ὂν ἐκ τοῦ μὴ ὄντος. καὶ οὕτως ἀγένητον καὶ ἀΐδιον ἐδείκνυ. καὶ οὔτε δὲ ἄπειρον οὔτε πεπερασμένον εἶναι· διότι ἄπειρον μὲν τὸ μὴ ὄν, ὡς οὔτε (μήτε) ἀρχὴν ἔχον μήτε μέσον μήτε τέλος, περαίνειν δὲ πρὸς ἄλληλα τὰ πλείω. And a little further on: ἀλλ' ὅτι μὲν οὔτε ἄπειρον οὔτε πεπερασμένον αὐτὸ δείκνυσιν, ἐκ τῶν προειρημένων δῆλον. πεπερασμένον δὲ καὶ σφαιροειδὲς αὐτὸ διὰ τὸ πανταχόθεν ὅμοιον λέγει.) παραπλησίως δὲ καὶ κίνησιν ἀφαιρεῖ καὶ ἠρεμίαν· ἀκίνητον μὲν γὰρ εἶναι τὸ μὴ ὄν· οὔτε γὰρ εἰς αὐτὸ ἕτερον, οὔτε αὐτὸ πρὸς ἄλλο ἐλθεῖν· κινεῖσθαι δὲ τὰ πλείω τοῦ ἑνός· ἕτερον γὰρ εἰς ἕτερον μεταβάλλειν. *De Xenoph.* c. 3: ἀδύνατόν φησιν εἶναι, εἴ τι ἔστι, γενέσθαι, τοῦτο λέγων ἐπὶ τοῦ θεοῦ. . . . εἰ δ' ἔστιν ὁ θεὸς ὁπάντων κράτιστον ἕνα φησὶν αὐτὸν προσήκειν εἶναι· εἰ γὰρ δύο ἢ πλείους εἶεν, οὐκ ἂν ἔτι κράτιστον καὶ βέλτιστον αὐτὸν εἶναι πάντων· ἕκαστος γὰρ ὢν τῶν πολλῶν ὁμοίως ἂν τοιοῦτος εἴη. τοῦτο γὰρ θεὸν καὶ θεοῦ δύναμιν εἶναι, κρατεῖν, ἀλλὰ μὴ κρατεῖσθαι, καὶ πάντων κράτιστον εἶναι, etc. ἀδύνατον-θεοῦ· (vide *sup.*) ἀνάγκη γὰρ ἤτοι ἐξ ὁμοίου ἢ ἐξ ἀνομοίου γενέσθαι τὸ γιγνόμενον. δυνατὸν δὲ οὐδέτερον· οὔτε γὰρ ὅμοιον ὑφ' ὁμοίου προσήκειν τεκνωθῆναι μᾶλλον ἢ τεκνῶσαι· ταῦτα γὰρ ἅπαντα τοῖς γε ἴσοις καὶ ὁμοίοις οὐχ ὑπάρχειν πρὸς ἄλληλα· οὔτ' ἂν ἐξ ἀνομοίου τἀνόμοιον γενέσθαι. εἰ γὰρ γίγνοιτο ἐξ ἀσθενεστέρου τὸ ἰσχυρότερον, etc. . . . τὸ ὂν ἐξ οὐκ ὄντος ἂν γενέσθαι, ὅπερ ἀδύνατον· ἀΐδιον μὲν οὖν διὰ ταῦτα εἶναι τὸν θεόν. . . . ἀΐδιον δ' ὄντα καὶ ἕνα καὶ σφαιροειδῆ οὔτ' ἄπειρον εἶναι οὔτε πεπεράνθαι. ἄπειρον μὲν τὸ μὴ ὂν εἶναι· τοῦτο γὰρ οὔτε ἀρχὴν οὔτε μέσον οὔτε τέλος οὔτε ἄλλο μέρος οὐδὲν ἔχειν . . . οἷον δὲ τὸ μὴ ὂν οὐκ ἂν εἶναι τὸ ὄν· περαίνειν δὲ πρὸς ἄλληλα εἰ πλείω εἴη . . . τὸ δὴ τοιοῦτον ὂν ἓν . . . οὔτε κινεῖσθαι οὔτε ἀκίνητον εἶναι. ἀκίνητον μὲν γὰρ εἶναι τὸ μὴ ὄν· οὔτε γὰρ εἰς αὐτὸ ἕτερον, οὔτ' αὐτὸ εἰς ἄλλο ἐλθεῖν· κινεῖσθαι δὲ τὰ πλείω ὄντα ἑνός· ἕτερον γὰρ εἰς ἕτερον δεῖν κινεῖσθαι, etc. This resemblance in the two accounts cannot be explained by a common use of the work of Xenophanes (as Bergk well observes, *Comment. de Arist. lib. de Xen.* 6), for this work, being a poem, had quite another form. Our comparison will also show that there is absolutely nothing in the account of Simplicius which might not be regarded as an extract from the so-called Aristotelian writing. The order of the arguments is sometimes different, and the expressions are once or twice altered--but that is of little consequence; and what Simplicius adds: ὥστε καὶ ὅταν ἐν ταὐτῷ μένειν λέγῃ καὶ μὴ κινεῖσθαι (αἰεὶ δ' ἐν ταὐτῷ τε μένειν, etc.) οὐ κατὰ τὴν ἠρεμίαν τὴν ἀντικειμένην τῇ κινήσει μένειν αὐτόν φησιν,

Melissus, &c., which we are considering. We need not therefore resort to the theory that Simplicius attributed this work to Theophrastus,[1] or that the work actually originated with this Peripatetic philosopher,[2] in order to explain his evidence.[3] His statements merely prove

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etc., is not an extract, but his own reflection. But even if it be admitted that Simplicius has been dependent upon the work concerning Melissus, there is not the least ground for making this direct dependence (Kern, vide *sup.* p. 541, 1) indirect by conjecturing, that Simplicius first made use of Theophrastus' Physics, and that Theophrastus in his Physics made use of the treatise περὶ Μελ. For, on the one hand, there is no proof of Simplicius having used the Physics of Theophrastus; indeed, the contrary may be proved from his own words; and on the other hand, the agreement between his exposition and the treatise περὶ Μελ. is so complete, that it can only be fully explained on the supposition that Simplicius made direct use of that treatise, and we have no right to ignore this most obvious and simple theory in favour of some other that is more recondite and artificial. The contents of the treatise on Melissus we know; that Simplicius was acquainted with this treatise is beyond question; that it is adequate for the explanation of his account is obvious. When such a simple result is obtained by reckoning with known quantities, there can be no possible inducement or justification for introducing such unknown and uncertain elements as the supposed exposition of Xenophanes in the Physics of Theophrastus, and the dependence of that exposition on the treatise π. Μελίσσου—even if Theophrastus had not expressly declared that such an exposition did not belong to the Physics. And the same holds good against Teichmüller's theory (*Stud. z. Gesch. d. Begr.* 593 sq.), that Simplicius had before him, besides the treatise π. Μελ. the same exposition as the writer of that treatise—viz., an exposition of Xenophanes' doctrine, which was composed by some later Eleatic. His account contains nothing whatever that cannot be explained by his having used the Pseudo-Aristotelian book, and the verse of Xenophanes, though not word for word. We have, therefore, no right to seek out other sources, traces of which, had they existed, must somewhere have been evident in the work.

[1] As is done by the Vatican MS.

[2] As Brandis (*Gr. Röm. Phil.* i. 158; iii. a, 291); Cousin (*Fragm. Philos.* i. 25, 7); and more decidedly Kern (*sup.* p. 544, 2) conjecture. In the *Comment. El.* 18, Brandis refuses to admit Aristotle's authorship of the work, yet he refers it only indirectly to Theophrastus. In the *Gesch. d. Entw. d. Gr. Phil.* i. 83, he allows the possibility of its having been written by some later Peripatetic.

[3] The objection of Brandis (*Comment. El.* 18) that Simplicius would not have mentioned Theophrastus as his source and omitted the name of Aristotle, had he at-

that he was acquainted not only with the remark of Theophrastus in his Physics which he mentions, but also with the work on Melissus, &c., no matter under whose name it passed; that he regarded this work as a genuine source of history, and that in his copy the third and fourth chapters referred to Xenophanes. This precedent, however, cannot, it is plain, furnish any criterion for us. The contents of the chapter do not agree with what we know on ancient authority respecting Xenophanes. While Xenophanes himself declares the divinity to be unmoved,[1] this work says it is neither moved nor unmoved;[2] and while Aristotle

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tributed the work he was using to Aristotle, is hardly well founded. Simplicius tells us much about the ancient philosophers, which he only knew from Aristotle, without naming his authority.

[1] In *Fr.* 4, quoted p. 539, 2.

[2] What Simplicius says (*sup.* p. 546), and Kern (*Quæst.* 11) adopted, but has since, *Beitr.*, p. 17, abandoned, in solution of this contradiction, explains nothing, and credits Xenophanes with distinctions of ideas, which are unknown before the time of Aristotle. Kern, therefore, has another theory ready, to which he comes back in *Beitr.* 4—viz., that Xenophanes at first denied motion of the Deity, and subsequently, rest. Now we cannot but allow the possibility that this philosopher may have changed his opinion. But to establish the fact of such a change, we must have distinct signs and evidences of it; and these are to be found neither in the verse of Timon, discussed p. 464, 1, third edition, nor in the fragment of Xenophanes (on which cf. p. *inf.* p. 559). None of our authorities in regard to Xenophanes mention any alteration in his point of view, nor does the work we are considering. All, except this work and the passage in Simplicius, which depends upon it, assert that he denied motion, and not rest, to the Deity (cf. p. 455, 6, third edition). We have, therefore, no right to suppose that our authorities were in possession of utterances to the contrary. This theory is a conjecture intended to reconcile the statements of our treatise with other evidence; but the conjecture would only be justifiable, if we were sure of the accuracy of those statements. Lastly, Teichmüller, *Stud. z. Gesch. d. Begr.* 619 sq., attempts to avoid the contradiction by remarking that Xenoph. indeed denied the movement of the universe, but not movement within the universe. But this way of escape is closed by the fact that the writing on Melissus does not deny movement and rest to *different* subjects—(movement to the universe; rest to its various parts—but to *one and the same* subject—

assures us that Xenophanes gave no opinion as to the Limitedness or Unlimitedness of the One,[1] both predicates are here expressly and categorically denied in respect to it. This last statement is all the more strange since it manifestly contradicts itself, and also the assertion immediately preceding it,[2] namely, that

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the ἓν, ὃν τὸν θεὸν εἶναι λέγει. This is clear from c. 3, 977 b, 8; c, 4, 978 b, 15, 37.

[1] *Metaph.* i. 5, 986 b, 18: Παρμενίδης μὲν γὰρ ἔοικε τοῦ κατὰ τὸν λόγον ἑνὸς ἅπτεσθαι, Μέλισσος δὲ τοῦ κατὰ τὴν ὕλην· διὸ καὶ ὁ μὲν πεπερασμένον, ὁ δ' ἄπειρόν φησιν αὐτό. Ξενοφάνης δὲ πρῶτος τούτων ἑνίσας οὐθὲν διεσαφήνισεν, οὐδὲ τῆς φύσεως τούτων οὐδετέρας ἔοικε θιγεῖν, ἀλλ' εἰς τὸν ὅλον οὐρανὸν ἀποβλέψας τὸ ἓν εἶναί φησι τὸν θεόν. This does not assert merely that Xenophanes left it uncertain whether he conceived the One as a formal or a material principle; but that he refused to define it as limited or unlimited. Even Parmenides and Melissus had not said the former; but Aristotle concludes from what they said regarding the second point, that the οὐθὲν διεσαφήνισε can only refer to this. Nor can we (with Kern, *Qu.* 49) explain these words by alleging that Xenophanes was self-contradictory in his utterances about the deity. Aristotle might doubtless have charged him with this contradictoriness, but he could not have said that, in regard to the question whether the Deity is limited or unlimited, he was wanting in clearness. How is it possible to express oneself more clearly than Xenophanes, according to our treatise, has done? In Kern's more recent reply (*Beitr.* 6) these considerations are not brought forward. The words οὐθὲν διεσαφήνισεν, he says, cannot relate to the question of the Limitedness or the Unlimitedness of the ἓν, for in that case περὶ τούτων, or something similar, would have been added; but the doctrine of Xenophanes 'is described as generally obscure.' But the addition which he misses is found in the words: οὐδὲ τῆς φύσεως τούτων οὐδετέρας ἔοικε θιγεῖν, the meaning of which can only be that Xenophanes did not discuss those questions on which Parmenides and Melissus disagree with one another. Kern further tries to show that Xenophanes really expressed himself contradictorily on the Limitedness and Unlimitedness of the One, because he calls God, ap. Timon (*inf.* p. 561, 1), ἶσον ἁπάντη, which Sext. *Pyrr.* I. 224, explains by σφαιροειδῆ; and, on the other hand, he holds that the roots of the earth extend to infinity (vide *inf.* p. 565, 5). But the σφαιροειδῆ of Sextus no doubt comes directly or indirectly from this treatise itself (c. 3, 977 b, 1: πάντῃ δ' ὅμοιον ὄντα σφαιροειδῆ εἶναι); in Timon's ἶσον ἁπάντη there is no allusion to the shape, it seems rather to relate to the οὖλος ὁρᾷ. &c. As regards the unlimited extension of the earth, it will presently be shown that we have no right to apply this definition to the Deity.

[2] Ritter (*Gesch. der Phil.* i.

the Deity is spherical. Moreover, it is highly improbable that Aristotle should have passed over such a singular opinion in passages like *Metaph.* i. 5, *Phys.* i. 3. We know that as late as the third century of our era the most learned commentators of Aristotle were not agreed whether Xenophanes held the Deity to be limited or unlimited;[1] and this phenomenon would be incomprehensible if they had possessed, in addition to the work of Aristotle, such definite and detailed explana-

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476 sq.) indeed thinks that Xenophanes, in the spherical form which he attributed to God, meant to imply the unity of the Limited and Unlimited; for the sphere is self-limited; and when he denied that God was unmoved he was merely asserting that God has no permanent relation to another. The possibility of such a meaning in these definitions, however, could not easily be proved; it is besides far too subtle for so ancient a thinker. Kern's interpretation (*Beitr.* 17; cf. *Xenoph.* 10 sqq.) is equally untenable: 'Xenophanes denied Limitedness only within Being and in opposition to a something cast out from Being and external to it, and Unlimitedness only in relation to the One which is the All.' He, therefore, conceived his One or God as uninterrupted (never finding in itself a limit), globe-shaped, and filling all space. In order to distinguish his Being from Non-Being and from the Many, and probably in opposition to the Pythagorean doctrine, he declined to place it in the categories of *πέρας* and *ἄπειρον*. This means that the limitedness which Xenophanes denied of Being is to be explained as *limitedness through something else*, and is to be restricted to this. Our text, however, does not say of Being; it is not limited by another, but absolutely (977 b, 3) *οὔτ' ἄπειρον εἶναι οὔτε πεπεράνθαι.* Thus, according to the universal meaning of the word, it is this absolute limiting, and not the limiting through another, which is denied of it; and when in proof of this proposition it is said: As the Many are limited each by each, but the One is not like the Many, so the One must be unlimited, it does not necessarily follow that the *οὔτε πεπαράνθαι* itself signifies not limited by another, and consequently that it is also denied of the spherical One. Not one passage has been quoted in which *πεπαράνθαι* or *πεπερασμένον εἶναι* (c. 3) means, without further addition, 'to be limited by something else.' But the refuting of the proposition attributed to Xenophanes c. 4, 278 a, 16 sqq. abundantly shows that the author never contemplated such a limitation.

[1] Simpl. *Phys.* 6 a: *Νικόλαος δὲ ὁ Δαμασκηνὸς ὡς ἄπειρον καὶ ἀκίνητον λέγοντος αὐτοῦ τὴν ἀρχὴν ἐν τῇ περὶ θεῶν ἀπομνημονεύει· Ἀλέξανδρος δὲ ὡς πεπερασμένον αὐτὸ καὶ σφαιροειδές.*

tions from Xenophanes himself as this treatise presupposes. Even had there existed a work of this kind by Xenophanes, it must have been greatly retouched and altered in the treatise,[1] otherwise all traces of the poetical expression and epic form of Xenophanes' work could never have been so entirely obliterated.[2] But, apart from the contents of this exposition, it is unlikely that there ever was such a work. A dialectical discussion so methodically conducted, and proceeding in so regular a manner from beginning to end in the scholastic form of a refutation, by means of dilemmas and *deductio ad absurdum*, could not, except in defiance of all laws of historical analogy,[3] be ascribed to the predecessor of Parmenides, to the philosopher whom Aristotle censures[4] for his want of practice in thought.

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[1] That this may be the case, even Brandis admits (*Gesch.d.Entw.* i. 83), when he says that the author may have brought together all that was isolated or loosely connected in the poem. Cf. Kern, *Qu.* p. 52, who says that the words and many parts of the argument may belong to the author. Where is our guarantee that the author has, in other respects, truly reproduced the doctrine of Xenophanes? We shall find no such guarantee in the author's name, for it is questionable whether the treatise has any right to it; nor (*vide* following note) in the poetical expressions on which Brandis bases his view.

[2] Brandis, *l. c.* 82, believed he could point out in this work a number of forms manifestly poetical and corresponding with some in the fragments of Xenophanes. But Kern, *Qu.* 52, remarks that of those he quotes only the word *ἀτρεμεῖν* is of any importance. An isolated word like this, however, can scarcely be taken into consideration, and even the words which Kern adds, *οὐδὲ γὰρ οὐδὲ πάντα δύνασθαι ἂν ἃ βούλοιτο* (977 a, 35), do not, for my part, remind me that 'the author is giving an account of a poetical work.'

[3] *Metaph.* i. 5, 986 b, 26: The Eleatics are *ἀφετέοι πρὸς τὴν νῦν παροῦσαν ζήτησιν, οἱ μὲν δύο καὶ παμπαν, ὡς ὄντες μικρὸν ἀγροικότεροι, Ξενοφάνης καὶ Μέλισσος.*

[4] It was principally this difficulty which determined Wendt (p. 163 of his edition of the first volume of Tennemann's *Gesch. d. Phil.* 18 sq.) in his judgment that the author of this work was probably a later philosopher, who in common with Simplicius was drawing from some indirect source, and gave the form of conclusion to the opinions here quoted; that

For all these reasons it seems most improbable that the work we are considering was written by Aristotle or

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he was not acquainted with the poem of Xenophanes itself. Reinhold (*Gesch. d. Phil.* i. 63, 3rd edition, and in the *Programm v. J.* 1847, *De genuina Xenophanis disciplina*) and Vermehren (*Autorschaft der dem Arist. zugeschriebenen Schrift. π. Ξενοφ.* Jena, 1861, p. 43) among the reasons they adduce (in agreement with Bergk, *Comment. de Arist. lib. de Xen. &c.*, Marb. 1843; Rose, *Arist. Libr. Ord.* 72 sqq.) for discarding this work, dwell especially on its dialectical and unpoetical form. Kern, *Qu.* 53, says, with some plausibility, that Melissus was included in Aristotle's judgment on Xenophanes, and yet we find in his fragments a purely dialectical exposition. I cannot admit that the discussions of Melissus display the same amount of logical ability as those ascribed in this writing to Xenophanes (cf. Kern, *Beitr.* 16). But even supposing they did, there would still be a great difference between Melissus and Xenophanes, and it would be impossible to say with Kern: '*Cur paullo ante Parmenidem idem fieri potuisse negandum sit, quod ætate Parmenidea factum esse certissimis testimoniis constet, non video.*' Between the literary activity of Melissus (who was not contemporary with Parmenides, but about thirty years younger) and that of Xenophanes, there apparently lies an interval of at least fifty years; and in this interval we find not only Heracleitus and the beginning of the Atomistic philosophy, but also the energetic activity of Parmenides and Zeno, through whom the strictly metaphysical character and the dialectical method of the Eleatic school was first established. That we cannot, indeed, expect at the commencement of this interval what we find at the end of it,—that no dialectical method can have been laid down in the poems of Xenophanes, surpassing even that of Parmenides in its form, but of which there is no trace in the fragments of Xenophanes' writings,—all this seems to me self-evident. I am quite ready 'to admit the internal possibility of such profound philosophising at so early a period, if only its existence be sufficiently proved' (Kern, *Beitr.* 16), but I cannot admit it when, as in the present case, there is not sufficient proof. Not only all historical analogy, as it seems to me, but the judgment of all antiquity, is on my side. Kern is quite logical in placing Xenophanes as a philosopher above Parmenides, on the ground of the treatise π. Μελίσσου. If, however, Xenophanes had really said all that this treatise ascribes to him, and in the sense that Kern supposes, he would not only have surpassed his successor in dialectical ability, but he would have taught, in respect to the Deity and the world, essentially the same doctrine that Parmenides taught concerning Being, thus greatly diminishing the personal merit of Parmenides, though he might not altogether have destroyed it. In this case it would be difficult to explain why not only Aristotle (whom Kern censures for his low estimate of Xenophanes as compared with Parmenides), but also

Theophrastus.[1] Moreover, it contains much that it would be impossible to connect with either of these philosophers. The assertion that Anaximander supposed water to be the substance of all things contradicts all their statements about Anaximander;[2] what is said of Empedocles sounds very unlike Aristotle;[3] Anaxagoras

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Plato (vide *infra*, § *Parm.* note 1), should place Parmenides so far above all the other Eleatics.

[1] Mullach, indeed, thinks differently. 'Aristotle,' he remarks, p. 12 sq. (*Fragm. Philos.* i. 274) in opposition to Bergk, 'in expounding the opinions of others, is often guilty of contradiction, and says much that we should hesitate to ascribe to him.' Similarly Kern, *Qu.* 49. That Aristotle ever so misrepresented either of his predecessors, or fell into such contradictions in speaking of him, as the author of this book has done in regard to Xenophanes, I must dispute. The objections brought by Mullach against his exposition of Parmenides are groundless, as will hereafter be shown. Kern urges that he often arbitrarily reduces the definitions of his predecessors to categories of his own system, and is not always just in his criticism of them. This, however, is not the same as denying that Xenophanes expressed his opinion on a point on which, according to our treatise, he expressed it fully and clearly—or, ascribing to him in that treatise a Dialectic entirely beyond his point of view. If, however, we even grant that Aristotle might really have written what we find in the treatise on Melissus, there is no reason to suppose that this treatise was merely an extract from larger Aristotelian works; the theory of Karsten, p. 97, would be much more probable, viz., that it was a sketch made by Aristotle for his own use.

[2] Cf. p. 251, 1; 232, 2; 234, 3.

[3] C. 2, 976, b 22: ὁμοίως δὲ καὶ Ἐμπεδοκλῆς κινεῖσθαι μὲν ἀεί φησι συγκρινόμενα (so Cod. Lips. reads instead of συγκινούμ.) τὸν ἅπαντα ἐνδελεχῶς χρόνον . . . ὅταν δὲ εἰς μίαν μορφὴν συγκριθῇ ὡς ἓν εἶναι, οὐδέν φησι τό γε κενεὸν πέλει οὐδὲ περισσόν. If this means that Empedocles really held the doctrine of endless motion, it contradicts the express statements of Aristotle, who elsewhere attributes to him an alternation of motion and rest (*infra*, vol. ii. § *Emp.*). On the other hand, if (with Kern, *Symb. Crit.* 25) we take it to mean that *during the coming together* of matter, motion went on uninterruptedly; the words τὸν ἅπαντα ἐνδελεχῶς χρόνον contain a pleonasm very unlike Aristotle. And it is difficult to see how the author (in the ὅταν δὲ, etc.), in order to prove that motion is possible without the void, can argue that in the σφαῖρος of Empedocles, there was also no void, for in the Sphairos motion has come to Rest. As to the design of 'proving that the doctrine of Empedocles can only, to a certain extent, be employed against Melissus' (Kern, *Beitr.* 13), I cannot discover any traces either in words or context.

is spoken of as if the author only knew of him by hearsay;[1] and among the doctrines discussed and criticised, side by side with much that is important, we find not a little that is trivial and unworthy of Aristotle or Theophrastus.[2] Thus the judgment which we formed of the genuineness of this work from its main contents is confirmed by these secondary traits; and if neither of them separately is decisive, yet together they constitute an amount of circumstantial evidence which cannot be outweighed by the testimony of manuscripts and later authors, so often found on the side of undoubtedly spurious writings.

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[1] C. 2, 975 b, 17: *ὡς καὶ τὸν Ἀναξαγόραν φασί τινες λέγειν ἐξ ἀεὶ ὄντων καὶ ἀπείρων τὰ γινόμενα γίνεσθαι.* No one can believe that Aristotle or Theophrastus would either of them use such expressions about a philosopher with whom they were so accurately acquainted, and to whom (as we shall see) they elsewhere distinctly ascribed this doctrine. Kern, *Beitr.* 13, appeals to Arist. *Metaph.* iv. 3, 1005 b, 23: *ἀδύνατον γὰρ ὁντινοῦν ταὐτὸν ὑπολαμβάνειν εἶναι καὶ μὴ εἶναι, καθάπερ τινὲς οἴονται λέγειν Ἡράκλειτον.* This analogy disappears as soon as we examine the passage more closely. Aristotle frequently ascribes to Heracleitus the proposition that the same thing at the same time is and is not; or is at the same time its own opposite (vide *infra*, p. 550, third edition). But he does not believe that Heracleitus held this in earnest; he reckons it among the *θέσεις λόγου ἕνεκα λεγόμεναι* (*Phys.* i. 2, 185 a, 5); he supposes that Heracleitus has not made his meaning clear, even to himself (*Metaph.* xi. 5, 1062 a, 31), and in order to indicate this he chooses the expression (*Metaph.* iv. 3) *τινὲς οἴονται λέγειν*. *λέγειν* here signifies: to express something as his opinion, to maintain something, as is clear from the way in which Aristotle, *l. c.*, proceeds: *οὐκ ἔστι γὰρ ἀναγκαῖον, ἅ τις λέγει ταῦτα καὶ ὑπολαμβάνειν.* If the question were simply whether the words quoted corresponded to those of Heracleitus, Aristotle would merely have said: *καθάπερ Ἡρ. λέγει*; as he says instead: *τινὲς οἴονται λέγειν*, the reason must be that he does not profess to be reproducing his own opinion. On the other hand, there was no necessity at all for the author of our treatise, in his remarks on Anaxagoras, to disclaim his responsibility in regard to them by such a mode of expression.

[2] How trivial, for instance, is the discussion of the question, whether anything can arise out of non-Being (c. 1, 975 a, 3 sqq.), and how little indication there is here of Aristotle's reply—viz., that nothing comes from absolute non-Being, but all things come from relative non-Being, the *δυνάμει ὄν*! How strange is the question in c. 4 sub init. *τί κωλύει μήτ' ἐξ ὁμοίου μήτ' ἐξ ἀνομοίου τὸ γιγνόμενον γίγνεσθαι, ἀλλ' ἐκ μὴ ὄντος*; and the objection raised in c. i. 975 a, 7, that Becoming is frequently supposed to have proceeded from nothing. Elsewhere neither Aristotle nor Theophrastus ever mentions, even as a hypothesis, or a possibility, such an origin from the *μὴ ὂν* without any further definition. How superfluous and disturbing is the remark, c. 2, 976 a, 33 sqq., that there might be several Infinites, as Xenophanes presupposed when he spoke of the Infinity of the earth beneath and of the air above, followed by a citation of

When and by whom the three treatises were composed is uncertain. That they emanated from the Peripatetic school is probable, both from their nature and also from the mention of them in the catalogue of Diogenes.[1] They appear to have included two fragments, which have been lost, on Parmenides and Zeno;[2] so that the author must have aimed at a complete representation and criticism of the Eleatic doctrines. The order adopted in their discussion seems to have been that indicated in the passage from Aristotle quoted above,[3] except that Zeno and Gorgias are added to the philosophers there mentioned. The author has taken their opinions chiefly from their own writings, and has given the essential content of these correctly when it presented itself to him in the form of an argument logically developed, as was the case with Melissus and Gorgias. In regard to Xenophanes, on the contrary, he appears to have misapprehended the statements of Aristotle and Theophrastus,[4] and to have started from the presupposition that this philosopher

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the verses in which Empedocles censures this utterance.

[1] Diogenes mentions among the writings of Aristotle (v. 25): *πρὸς τὰ Μελίσσου α΄ . . . πρὸς τὰ Γοργίου α΄, πρὸς τὰ Ξενοφάνους α΄, πρὸς τὰ Ζήνωνος α΄.*

[2] Cf. p. 535 sqq.

[3] Cf. p. 537; 547, 1.

[4] *Supra*, p. 547, 1; 542, 1.

expressly denied, in respect to the Deity, limitedness as well as unlimitedness, and movement as well as rest; and then to have developed the proofs of this statement from the indications which he found, or thought he found, in the poems of Xenophanes. But it is also possible that some other author may have anticipated him in so doing, and that this exposition, and not Xenophanes himself, may have been his immediate source. What is really derived from Xenophanes we can only discover from a comparison of this treatise with other accounts. Its testimony as to supposed propositions of his is not sufficient to establish their authenticity in cases where it stands alone.

The development of the Eleatic philosophy was completed in three generations of philosophers, whose activity extended over about a century. Xenophanes, the founder of the school, first expresses their general principle in a theological form. In opposition to Polytheism, he declares the Deity to be the One, underived, all-embracing Being; and in connection with this, the universe to be uniform and eternal. At the same time, however, he recognises the Many and the Mutable as a reality. Parmenides gives to this principle its metaphysical basis and purely philosophic expression; he reduces the opposites of the One and the Many, the Eternal and the Become, to the fundamental opposite of the Existent and non-Existent; derives the qualities of both from their concept, and proves the impossibility of Becoming, Change and Plurality in a strictly universal sense. Lastly, Zeno and Melissus maintain the propositions of Parmenides as against the ordinary opinion; but carry the opposition between them so far that the inadequacy of the Eleatic principle for the explanation of phenomena becomes clearly apparent.

II. *XENOPHANES.*[1]

Our knowledge of the doctrine of Xenophanes is derived from two sources, viz., such fragments as have been preserved of his works, and the accounts of ancient writers. These two sources are not always in agree-

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[1] Colophon is universally named as the native city of Xenophanes; his father is called by Apollodorus Orthomenes; by others, Dexius, or Dexinus (Diog. ix. 18; Lucian, *Macrob.* 20; Hippolyt. *Refut.* i. 14; Theodoret, *Cur. gr. aff.* iv. 5, p. 56). As to his date, Apollodorus says, ap. Clem. *Strom.* i. 301 C: *κατὰ τὴν τεσσαρακοστὴν Ὀλυμπιάδα γενόμενον παρατετακέναι ἄχρι τῶν Δαρείου τε καὶ Κύρου χρόνων.* We cannot suppose that Ξέρξους is here intended for Κύρου, or that Δαρείου is to be erased; for Hippolyt. *l. c.* also mentions Cyrus. It cannot, however, be regarded as any proof of the great age of Xenophanes (*παρατετακέναι* sc. *τὸν βίον*), that having been born in the 40th Olympiad, he should have been living in the time of Cyrus. The peculiarity of placing Darius before Cyrus is sufficiently explained on metrical grounds (Apoll. wrote in trimeter), cf. Diels, *Rhein. Mus.* xxxi. 23. On the other hand, the 50th (N) Olymp. must certainly be substituted for the 40th (M), as the time of his birth; for (Diels, p. 23) the statement that he flourished in Ol. 60 (Diog. ix. 20) also originates with Apollodorus; and the ἀκμὴ is usually placed in the 40th year of a man's life. But as Sext. *Math.* i. 257 also names Ol. 40 as the time of his birth, the error must previously have crept into the text used by Sextus and Clemens. The date of the ἀκμὴ, according to which Apoll. probably calculated the year of birth, was determined by the founding of Elea, sung by Xenophanes (cf. Diels, *l. c.*). This we infer from Diog. *l. c.* Eusebius mentions Xenophanes in Ol. 60 and also in Ol. 56; but that is unimportant. He is also mentioned more indefinitely by Sotion, ap. Diog. ix. 18, as a contemporary of Anaximander. Eus. *Pr. Ev.* x. 14; xiv. 17, 10, says that he was contemporary with Pythagoras and Anaxagoras (who is elsewhere placed too early by Eus.). Iambl. *Theol. Arith.* p. 41, names Pythagoras only. Hermippus, ap. Diog. viii. 56; cf. *ibid.* ix. 20, makes him the teacher of Empedocles, Timæus, ap. Clem. *l. c.*; and Plut. *Reg. Apophth.* Hiero, 4, p. 175, the contemporary of Hiero and Epicharmus, Ps. Lucian, even the disciple of Archelaus; and the Scholiast in Aristophanes (*Peace*, v. 696) ascribes to him a saying concerning Simonides, on which little stress is to be laid, cf. Karsten, *Phil. Græc. Rell.* i. 81 sq. He himself seems to speak of Pythagoras as deceased, whereas he (Xenophanes) is named by Heracleitus as one of his predecessors (vide *supra*, p. 481, 1; 510, 4). He also mentions Epi-

menides after Epimenides' death (Diog. i. 111; ix. 18). He asserts that the beginning of the conflict between the Ionian colonies and the Persians took place in his early life (Fr. 17, ap. Athen. ii. 54, e), for when he is asked πηλίκος ἦσθ', ὅθ' ὁ Μῆδος ἀφίκετο, this cannot of course refer to a recent occurrence, but to something long past (cf. Cousin, *Fragm.* i. 3 sqq.; Karsten, p. 9). This agrees with the statement in Diog. ix. 20, that he celebrated the founding of Elea (Ol. 61) in 2000 hexameters, and with the anecdote, ap. Plut. *De Vit. Pud.* c. 5, p. 530, according to which he was acquainted with Lasus of Hermione (about 520—500). All things considered, the greater part of his lengthened activity may most probably be placed in the second half of the sixth century; his birth may have occurred in the third or fourth decad of this century; his death must have happened in the following century; for it is certain that he died very old. In the verses, ap. Diog. ix. 18, he says he has been roaming about in Greek lands for 67 years—since he was 25. Lucian, therefore, *loc. cit.*, errs in giving the length of his life as 91 years. According to Censorin. *Di. Nat.* 15, 3, he was more than a hundred. As to his personal history, we are informed that he was driven out from his native city to different places, and resided at various times in Zancle, Catana and Elea (Diog. ix. 18; Aristot. *Rhet.* ii. 23, 1400 b, 5; Karsten, p. 12, 87); that he became very poor (Diog. ix. 20, after Demetrius and Panætius; Plut. *Reg. Apophth.* 4, p. 175). The statement of his having been the disciple of Telauges, the Pythagorean (Diog. i. 15), of Boton, an unknown Athenian, or even of Archelaus (Diog. ix. 18; Ps. Lucian, *l.c.*) deserves no attention. When Plato (*Soph.* 242 D) says of the Eleatic school, ἀπὸ Ξενοφάνους τε καὶ ἔτι πρόσθεν ἀρξάμενον, he can scarcely be alluding to any particular predecessor of Xenophanes. Cousin (p. 7) thinks he means the Pythagoreans, but Plato could not have called them the founders of the Eleatic doctrine of the Unity of Being. He is probably speaking in accordance with the general presupposition that doctrines like his had been held before his time; it was then customary to seek the doctrines of the philosophers in the ancient poets. Lobeck conjectures (*Aglaoph.* i. 613) that he is specially referring in this passage to the Orphic Theogony, but with this I cannot agree. A story of Plutarch's, which involves an Egyptian journey (*Amator.* 18, 12, p. 763; *De Is.* 70, p. 379, and the same, without the name of Xenophanes, ap. Clem. *Cohort.* 15 B), arbitrarily transfers to Egypt, what, according to Arist. *l. c.*, happened in Elea. On the other hand, it is quite possible that even in his own country he may have been led to the beginnings of the Ionic natural philosophy by his passion for enquiry. Theophrast, following Diog. ix. 21, calls him a disciple of Anaximander, and we have no reason to doubt the assertion; and the statement of his having contradicted Thales and Pythagoras ment with each other; for while in the fragments of his didactic poem theological opinions are predominant, and only a few physical theories are introduced, the ancient writers ascribe to him general metaphysical statements which closely connect him with his successor Parmenides. Our view of the relation of these two representations must chiefly determine our conception of Xenophanes.

Let us first examine the sayings of Xenophanes himself which have been handed down by tradition. In these, his main position seems to be that conflict with the popular polytheistic belief by which he was known even in antiquity.[1] He opposes his doctrine of

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(Diog. ix. 18) may be founded on the fact that he censures, not only Pythagoras (p. 481, 1), but Thales. (Farther details later on.) That he possessed more than ordinary knowledge may be inferred from the remark of Heracleitus (p. 510, 4). To his contemporaries he was chiefly known through his poems, which, according to ancient usage, he recited (Diog. ix. 18) on his journeys. All kinds of poems have been ascribed to him by later writers—Epics, Elegies, and Iambics (Diog. *l. c.*; cf. Kern, *Xenoph.* 18); Tragedies (Eus. *Chron. Ol.* 60, 2); Parodies (*Athen.* ii. 54 e); σίλλοι (*Strabo*, xiv. 1, 28, p. 643; *Schol. in Aristoph. Knights*, v. 406; Prokl. *in Hes. Opp. et Di.* v. 284; Eustath. on *Il.* ii. 212; Tzetz. in Bernhardy's edition of the *Geograph. Min.* p. 1010); or, as Apul. *Floril.* iv. 20, says (the manuscripts, however, read here *Xenocrates*), satires. Cousin (p. 9) and Karsten, 19 sqq., will not admit the σίλλοι; but cf. Wachsmuth, *De Timone Philasio*, 29 sq. His philosophic opinions were contained in a didactic poem in Epic metre, of which we possess fragments; that it bore the title περὶ φύσεως is only asserted by the more recent writers (Stob. *Ecl.* i. 294; Poll. *Onomast.* vi. 46), and their evidence is the more suspicious, as the work itself seems to have been early lost. Cf. Brandis, *Comm. El.* 10 sqq.; Karsten, 26 sqq. (Simplicius, e.g., mentions that he had not seen it; *De Cœlo*, 233 b, 22; *Schol. in Arist.* 506 a, 40). In Diog. i. 16, where, according to the former reading, Xenophanes was enumerated among the most fruitful of the philosophic writers, Xenocrates is to be substituted; cf. Nietzsche, *Rh. Mus.* xxv. 220 sq. The judgment of Athen. xiv. 632 D, on the verses of Xenophanes, is more favourable than that of Cicero, *Acad.* ii. 23, 74.

[1] Cf. among other texts, Arist. *Poet.* 25, 1460 b, 36. The utterances of the poets are defended on the

the unity of God to the supposed plurality of gods; to their origin in time, the eternity of God; to their variability, his unchangeableness; to their anthropomorphic nature, his sublimity; to their physical, intellectual, and moral limitations, his infinite spirituality. One God rules over gods and men, for the Deity is the highest, and the highest can be but one.[1] This God is

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ground that they represent things as they are, or as they ought to be, *εἰ δὲ μηδετέρως, ὅτι οὕτω φασίν, οἷον τὰ περὶ θεῶν. ἴσως γὰρ οὔτε βέλτιον οὕτω λέγειν, οὔτ' ἀληθῆ, ἀλλ' ἔτυχεν ὥσπερ Ξενοφάνης* (sc. *λέγει*; the most recent editors, however, on account of the *Ξενοφάνει*, or *η*, of most of the MSS. read with Ritter: *ὡς παρὰ Ξενοφάνει*) *ἀλλ' οὔ φασι*. These words have been unnecessarily altered by modern authors, and have received many false interpretations (cf. Karsten, p. 188). They are translated quite simply as follows: 'For it may well be that the usual notions about the gods are neither good nor true, but that it is with the gods as Xenophanes believes, but the many are of another opinion.' Ritter thinks that the whole chapter is a later addition, but even in this case it must have been based on something authentic, and the words we have quoted have an Aristotelian ring in them.

[1] *Fr.* 1 ap. Clem. *Strom.* v. 601 C:—

εἷς θεὸς ἔν τε θεοῖσι καὶ ἀνθρώποισι
μέγιστος,
οὔτε δέμας θνητοῖσιν ὁμοίιος οὔτε
νόημα.

Arist. *De Melisso*, c. 3, 977 a, 23 sqq.: *εἰ δ' ἔστιν ὁ θεὸς πάντων κράτιστον, ἕνα φησὶν αὐτὸν προσήκειν εἶναι, εἰ γὰρ δύο ἢ πλείους εἶεν, οὐκ ἂν ἔτι κράτιστον καὶ βέλτιστον αὐτὸν εἶναι πάντων*, &c. Plut. ap. *Eus. Pr. Ev.* i. 8, *sup.* p. 539, 2; cf. 554, where it is also shown why and in what sense we can accept the Pseudo-Aristotelian writing as evidence concerning Xenophanes. That Xenophanes spoke in his writings of the Unity of God is clear from Aristotle's words, quoted p. 539, 2. The conjecture, however, that he only became a strict Monotheist in later life, having previously believed, not in one God, but in a supreme God far above the other deities (Kern, *Beitr.* 4), finds no support in this fragment. The many gods, of whom one is the highest, need not necessarily be conceived as real gods. If, according to the theory of Xenophanes, they only existed in human imagination, the true God might still, especially in poetical language, be compared with them, and said to be greater than they. 'The greatest among gods and men' must mean the greatest absolutely. When Heracleitus, for instance (vide *infra*, vol. ii.), says none of the gods nor of human kind made the world, he only means to express that it was not made at all: and even in a Christian hymn God is called the God of gods.

uncreated, for what is created is also perishable, and the Deity can only be conceived as imperishable.[1] Nor is he subject to change: what beseems him is to remain unmoved in one place, and not to wander hither and thither.[2] Moreover, what right have we to attribute to him a human form? Each man represents his gods as he himself is: the negro as black and flat-nosed, the Thracian as blue-eyed and red-haired; and if horses and oxen could paint, no doubt they would make gods like horses and oxen.[3] Just so it is with the other imperfections of human nature, which we transfer to the gods. Not only the immoral conduct related by

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[1] *Fr.* 5 ap. Clem. *l. c.*, and, with some variations, ap. Theod. *Cur. Gr. Aff.* iii. 72, p. 49: ἀλλὰ βροτοὶ δοκέουσι θεοὺς γεννᾶσθαι . . . . τὴν σφετέρην δ' ἐσθῆτα (Theod. preferably αἴσθησιν) ἔχειν φωνήν τε δέμας τε. Arist. *Rhet.* ii. 23, 1399 b, 6: Ξ. ἔλεγεν, ὅτι ὁμοίως ἀσεβοῦσιν οἱ γενέσθαι φάσκοντες τοὺς θεοὺς τοῖς ἀποθανεῖν λέγουσιν· ἀμφοτέρως γὰρ συμβαίνει μὴ εἶναι τοὺς θεούς ποτε. Ibid. 1400 b, 5: Ξ. Ἐλεάταις ἐρωτῶσιν εἰ θύωσι τῇ Λευκοθέᾳ καὶ θρηνῶσιν, ἢ μή, συνεβούλευεν, εἰ μὲν θεὸν ὑπολαμβάνουσι, μὴ θρηνεῖν, εἰ δ' ἄνθρωπον, μὴ θύειν. (For the version in Plutarch of this story, vide *infra*, p. 557, note, *De Mel.* c. 3, cf. p. 544, 1), where, however, the demonstration is not that of Xenophanes. Diog. ix. 19: πρωτός τ' ἀπεφήνατο, ὅτι πᾶν τὸ γινόμενον φθαρτόν ἐστι.

[2] *Fr.* 4 ap. Simpl. *Phys.* 6 a (vide *sup.* p. 539, 2). Cf. Arist. *Metaph.* i. 5, 986 b, 17, where it is stated of the Eleatics generally: ἀκίνητον εἶναί φασι (τὸ ἕν).

[3] *Fr.* 1, 5, and *Fr.* 6 ap. Clem. *Strom.* v. 601 D, Theod. *l. c.*; Eus. *Pr. Ev.* xiii. 13, 36:—

ἀλλ' εἴτοι χεῖράς γ' εἶχον βόες ἠὲ λέοντες,
ἢ γράψαι χείρεσσι καὶ ἔργα τελεῖν ἅπερ ἄνδρες (sc. εἶχον),
ἵπποι μέν θ' ἵπποισι βόες δέ τε βουσὶν ὁμοίας (so Theod., the others ὑμοῖυι),
καί κε θεῶν ἰδέας ἔγραφον καὶ σώματ' ἐποίουν,
τοιαῦθ' οἷόν περ καὐτοὶ δέμας εἶχον ὅμοιον.

For the rest, cf. Theod. *l. c.* and Clem. *Strom.* vii. 711 B. Also what is said in Diog. ix. 19: οὐσίαν θεοῦ σφαιροειδῆ μηδὲν ὅμοιον ἔχουσαν ἀνθρώπῳ· ὅλον δ' ὁρᾷν καὶ ὅλον ἀκούειν, μὴ μέντοι ἀναπνεῖν, if the last definition is really founded on some expression of Xenophanes. That it is aimed against the Pythagorean doctrine of the respiration of the world (*sup.* p. 467, 1), I do not believe (vide Kern, *Beitr.* 17; *Xenoph.* 25).

Homer and Hesiod,[1] but all limitation is unworthy of them. God is as unlike to mortals in mind as in form. The Deity is all eye, all ear, all thought, and through his intellect he rules everything without exertion.[2] Thus a pure monotheism is here confronted with the religion of nature and its many gods, while, at the same time, we should not be justified in ascribing to this monotheism a strictly philosophic character on the strength of the assertions we have quoted, taken alone.[3]

Other testimonies, indeed, carry us beyond this point, and apply the utterances of Xenophanes on the unity and eternity of God in a general manner to the totality of things. Plato includes his theory with that of his successors in the expression that all is One.[1] So also Aristotle calls him the first founder of the doctrine of the unity of all things, and observes that he brought forward his propositions concerning the unity of God with reference to the universe.[2] In agreement with this, Theophrastus[3] alleges that in and with the unity of the primitive principle he maintained the unity of all existence, and Timon represents him as saying of himself that wheresoever he turned his gaze all things resolved themselves into one and the same eternal, homogeneous essence.[4] We have no right to mistrust these unanimous statements of our most trustworthy authorities (with whom, moreover, all the later writers agree),[5] merely because a pantheism of this kind is incompatible with the pure theism of Xenophanes.[1] How do we know that his assertions of the unity, eternity, unlimitedness, and spirituality of God were intended to be understood in a theistic, and not in a pantheistic sense? His own expressions leave this quite undecided; but the probabilities, even apart from the testimony of the ancients, are in favour of the pantheistic view. For the Greek gods are merely personified powers of nature and of human life; and, therefore, it was much more obvious for a philosopher who objected to their plurality to unite them in the conception of universal physical force, than in the idea of a God external to the world. Thus we have every reason to suppose that Xenophanes, in his propositions concerning the unity of God, intended to

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[1] *Fr.* 7 ap. Sext. *Math.* ix. 193, i. 289:—

πάντα θεοῖς ἀνέθηκαν Ὅμηρός θ᾽
Ἡσίοδός τε
ὅσσα παρ᾽ ἀνθρώποισιν ὀνείδεα καὶ
ψόγος ἐστὶν,

εἰ (this is the reading of Steph., the MSS. have *ὃς*, Karst. and Wachsm. p. 74, *καὶ*),

πλεῖστ᾽ ἐφθέγξαντο θεῶν ἀθεμίστια
ἔργα,
κλέπτειν, μοιχεύειν τε καὶ ἀλλήλους
ἀπατεύειν.

On account of this hostility to the poets of the national religion, Xenophanes is called by Timon ap. Sext. *Pyrrh.* i. 224; Diog. ix. 18: *Ὁμηραπάτης ἐπισκώπτην* (preferably *ἐπικόπτην*) and Diog. *l. c.* says of him: *γέγραφε δὲ . . . καθ᾽ Ἡσιόδου καὶ Ὁμήρου ἐπικόπτων αὐτῶν τὰ περὶ θεῶν εἰρημένα.* The observation of Aristotle, discussed *sup.* p. 558, 1, refers to these and similar passages.

[2] *Fr.* 1, vide *sup.* p. 559, 1; *Fr.* 2 ap. Sext. ix. 144 (cf. Diog. ix. 19; Plut. ap. Eus. *Pr. Ev.* i. 8, 4).: *οὖλος ὁρᾷ, οὖλος δὲ νοεῖ, οὖλος δέ τ᾽ ἀκούει.* *Fr.* 3 ap. Simpl. *Phys.* 6 a: *ἀλλ᾽ ἀπάνευθε πόνο νόου φρενὶ πάντα κραδαίνει.* Cf. Diog. *l. c.*: *σύμπαντά τ᾽ εἶναι* [*τὸν θεὸν*] *νοῦν καὶ φρόνησιν καὶ ἀΐδιον.* Timon. ap. Sext. *Pyrrh.* i. 224: *ἐκτὸς ἀπ᾽ ἀνθρώπων* (according to the emendation of Fabricius; Wachsmuth, *De Tim.* 64, reads with Röper: *ὃς τὸν ἀπάνθρωπον*) *θεὸν ἐπλάσατ᾽ ἶσον ἀπάντη ἀσκηθῆ . . . νοερώτερον ἠὲ νόημα* (cf. Wachsmuth, for some attempts to complete the last verse, none of which commend themselves to me). Further details, p. 562, 5. Perhaps the assertion ap. Diog. has this same meaning *ἔφη δὲ καὶ τὰ πολλὰ ἥσσω νοῦ εἶναι.*

[3] Among these may also be reckoned the attack on soothsaying which Cic. *Divin.* i. 3, 5; Plut. *Plac.* v. 1, 2, attribute to Xenophanes.

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[1] *Soph.* 242 D: *τὸ δὲ παρ' ἡμῖν Ἐλεατικὸν ἔθνος, ἀπὸ Ξενοφάνους τε καὶ ἔτι πρόσθεν ἀρξάμενον, ὡς ἑνὸς ὄντος τῶν πάντων καλουμένων οὕτω διεξέρχεται τοῖς μύθοις.*

[2] *Metaph.* i. 5, 986 b, 10: *εἰσὶ δέ τινες οἳ περὶ τοῦ παντὸς ὡς ἂν μιᾶς οὔσης φύσεως ἀπεφήναντο.* In regard to these persons it is then said that their uniform primitive essence is not, like the primitive matter of the Physicists, a cause of Becoming, but *ἀκίνητον εἶναί φασιν . . . Ξενοφάνης δὲ πρῶτος τούτων ἑνίσας*, &c., vide *supra*, p. 548, 1.

[3] Ap. Simpl. *supra*, p. 543, 1.

[4] Ap. Sext. *Pyrrh.* i. 224, attributes to him these words:—

— ὅππη γὰρ ἐμὸν νόον εἰρύσαιμι
εἰς ἓν ταὐτό τε πᾶν ἀνελύετο· πᾶν δ' ἐὸν αἰεὶ
πάντῃ ἀνελκόμενον μίαν εἰς φύσιν ἵσταθ' ὁμοίαν.

[5] Cic. *Acad.* ii. 37, 118: *Xenophanes . . unum esse omnia neque id esse mutabile et id esse Deum, neque natum unquam et sempiternum, conglobata figura.* N. D. i. 11, 28: *tum Xenophanes, qui mente adjuncta omne praeterea, quod esset infinitum, Deum voluit esse.* That the former passage also is quoted from the Greek, is proved by Krische, *Forsch.* i. 90. There is a Greek exposition (naturally from a more ancient source) which pretty nearly coincides with it, ap. Theod. *Cur. gr. aff.* iv. 5, p. 57 Sylb.: Ξ. . . . *ἓν εἶναι τὸ πᾶν ἔφησε, σφαιροειδὲς καὶ πεπερασμένον, οὐ γεννητὸν, ἀλλ' ἀΐδιον καὶ πάμπαν ἀκίνητον.* Plutarch ap. Eus. *Pr. Ev.* i. 8, 4: Ξεν. δὲ . . . *οὔτε γένεσιν οὔτε φθορὰν ἀπολείπει, ἀλλ' εἶναι λέγει τὸ πᾶν ἀεὶ ὅμοιον. εἰ γὰρ γίγνοιτο τοῦτο, φησὶν, ἀναγκαῖον πρὸ τούτου μὴ εἶναι· τὸ μὴ ὂν δὲ οὐκ ἂν γένοιτο, οὐδ' ἂν τὸ μὴ ὂν ποιῆσαι τι, οὔτε ὑπὸ*

τοῦ μὴ ὄντος γένοιτ' ἄν τι. Sext. *Pyrrh.* i. 225 (cf. iii. 218): ἐδογμάτιζε δὲ ὁ Ξ. . . ἓν εἶναι τὸ πᾶν καὶ τὸν θεὸν συμφυῆ τοῖς πᾶσιν· εἶναι δὲ σφαιροειδῆ καὶ ἀπαθῆ καὶ ἀμετάβλητον καὶ λογικόν. Hippolyt. *Refut.* i. 14: λέγει δὲ ὅτι οὐδὲν γίνεται οὐδὲ φθείρεται οὐδὲ κινεῖται, καὶ ὅτι ἓν τὸ πᾶν ἐστιν ἔξω μεταβολῆς. φησὶ δὲ καὶ τὸν θεὸν εἶναι ἀΐδιον καὶ ἕνα καὶ ὅμοιον πάντη καὶ πεπερασμένον καὶ σφαιροειδῆ πάντη καὶ πᾶσι τοῖς μορίοις αἰσθητικόν. Galen, *H. Phil.* c. 3, p. 234: Ξενοφάνην μὲν περὶ πάντων ἠπορηκότα, δογματίσαντα δὲ μόνον τὸ εἶναι πάντα ἓν καὶ τοῦτο ὑπάρχειν θεὸν, πεπερασμένον, λογικὸν, ἀμετάβλητον. All these accounts seem to emanate from the same source. The unity of all Being is likewise ascribed to Xenophanes by Alexander *Metaph.* 23, 18 Bon. (934 a, 29): λέγει μὲν περὶ Ξενοφάνους καὶ Μελίσσου καὶ Παρμενίδου· οὗτοι γὰρ ἓν τὸ πᾶν ἀπεφήναντο. Ibid. 32, 17 (986 b, 8): τῶν ἓν τὸ ὂν εἶναι θεμένων . . . ὡς τοῦ παντὸς μιᾶς φύσεως οὔσης· ὧν ἦν Ξενοφάνης τε καὶ Μέλισσος καὶ Παρμενίδης. Ibid. 33, 10 (986 b, 17, vide *sup.* p. 548, 1) τὸ δὲ 'ἑνίσας' ἴσον ἐστὶ τῷ πρῶτος ἓν εἶναι τὸ ὂν εἰπών.

[1] Cousin, *Fragm. Phil.* i. 37 sqq.; Karsten, 134 sqq. Similarly Brandis doubts (*Gr. Röm. Phil.* i. 365) that Xenophanes taught the unity of Being, since he could not have identified the Divided, which manifests itself in the Becoming, with the One simple Being; and Krische, *Forsch.* 94, will not allow him to have been a Pantheist because he would only admit Being, as separated from Becoming, to be the Deity. But it is a question whether Xenophanes distinguished between Being and Becoming so definitely as this would imply.

assert at the same time the unity of the world; and from his point of view it is easy to see how the second of these assertions would appear to be directly involved in the first. In his speculations on the cause of all things, he sought that cause, herein agreeing with the popular faith, primarily in the rule of the gods. But he could not reconcile their plurality, restriction, and anthropomorphic nature with his concept of Deity. At the same time, the unity of the world, which even to the sensible intuition asserts itself in the apparent limitation of the world by the vault of heaven, and which deeper reflection discerns in the likeness and interconnection of phenomena, seemed to him to necessitate the unity of the force that formed the world,[1]—which force he did not conceive as separate from the world. God and the world are here related to one another as essence and phenomenon. If God is One, things according to their essential nature must be One; and conversely the polytheistic religion of nature becomes a philosophic pantheism.

In connection with his doctrine of the unity of God, Xenophanes is said to have described the Deity as homogeneous; in other words, he maintained the qualitative simpleness (*Einfachheit*) of the divine essence simultaneously with its unity. Although, however, this statement is supported by proportionately ancient testimony,[1] it is questionable whether it is not in this form merely an inference from the words used by Xenophanes in describing the divine knowledge.[2] On the other hand, the statement that he called the Deity spherical and limited, or contrariwise, as others contend, unlimited and infinite,[3] contradicts the express declaration of Aristotle and Theophrastus.[4] It is hardly possible, however, that both these statements can be wholly without foundation. On the one hand, Xenophanes attributes to the world infinite extension—for he says that the air above, and the roots of the earth beneath, extend into infinity:[5] on the other hand, we hear that he, at the same time, describes the universe as a sphere.[1] But the very contradiction between these two sayings proves that they are not scientific propositions, but incidental utterances which occurred in different portions of the poems of Xenophanes. He may at one time have spoken of the spherical form of the heavens, and at another, of the immeasureable extent of the world beneath, and of the space of the air above, without troubling himself about the mutual compatibility of these two conceptions. Nor is it probable that he meant to express by either of them any fixed conviction in regard to the shape and extension of the world—still less that they had reference to the Deity. The statement that he declared the world to be underived, eternal, and imperishable,[2] may, with more reason, remind us of the similar definitions of the Deity. The eternity of the world might seem to him to be implied in that of God, because God was to him the immanent cause of the world. But he appears to have attributed eternity to the world, only in a general manner, in regard to its substance; and not to have taught, as a consequence of this, that the *universe* in its present condition was underived.[3] Also the proposition that the All remained like to itself[4] may have been enunciated by him in regard to the regularity of the course of the world and the invariableness of the universe. But that he absolutely denied all generation and destruction, all change and movement in the world, as more recent authors assert,[1] we cannot think possible. There is no mention of such a denial in ancient authorities or in the fragments of Xenophanes' writings;[2] and, moreover, a number of statements of a physical nature respecting the origin of individual things, and the changes of the material earth are attributed to this philosopher, while no remark is ever made[3] in connection with these that, like Parmenides in his physics, Xenophanes was speaking of illusory phenomena, and not of the reality. None of our authorities maintain that he opposed Being to non-Being in the manner of his successor, or taught that Being alone was reality.

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[1] This is indicated not only by Timon in the verses quoted above, but also by Aristotle, *l. c.*, in the words: εἰς τὸν ὅλον οὐρανὸν ἀποβλέψας, which primarily only assert that Xenophanes exclusively regarded neither the form nor the matter of things, but fixed his attention without further discrimination of these aspects on the world as a whole; the words, however, also imply that he arrived at the Unity of God through the consideration of the world. This is confirmed by his doctrine of the eternity of the world, which we shall shortly discuss.

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[1] Cf. the quotations on p. 539, 2; 561, 2; 562, 4; 562, 5; from the treatise on Melissus, Timon, and Hippolytus.

[2] This conjecture is favoured by the treatise on Melissus, which both in its exposition and criticism of Xenophanes' doctrine couples the proposition concerning the homogeneous nature of God with the *οὖλος ὁρᾷν*, &c. Cf. c. 3, 977 a, 36 (*supra*, p. 539, 2); c. 4, 978 a, 3 (after Mull.): *ἕνα δὲ ὄντα πάντη ὁρᾷν καὶ ἀκούειν οὐδὲν προσήκει . . . ἀλλ' ἴσως τοῦτο βούλεται τὸ πάντη αἰσθάνεσθαι, ὅτι οὕτως ἂν βελτιστα ἔχοι, ὅμοιος ὢν πάντη.* Similarly Timon, in the verses quoted p. 560, 1, connects the *ἶσον ἁπάντη* with the *νυερώτερον ἠὲ νόημα.*

[3] Vide *supra*, p. 549. 1; 560, 2; 562, 1. The limitedness of the primitive essence is ascribed by Philop. *Phys.* A. 5 (ap. Karsten. p. 126), both to Xenophanes and Parmenides.

[4] *Supra*, p. 548, 1; 543, 1.

[5] He himself, it is true, says this of the earth; cf. Act. Tat. *Isag.* p. 127 E, Pet.:

γαίης μὲν τόδε πεῖρας ἄνω πὰρ ποσ-
σὶν ὁρᾶται
αἰθέρι προσπλάζον, τὰ κάτω δ' ἐς
ἄπειρον ἱκάνει.

But Arist. *De Cœlo*, ii. 12, 294 a, 21, applies to him, when speaking of those who *ἄπειρον τὸ κάτω τῆς γῆς εἶναί φασιν, ἐπ' ἄπειρον αὐτὴν ἐῤῥιζῶσθαι λέγοντες, ὥσπερ Ξενοφ.*, the censure of Empedocles against the opinion that *ἀπείρονα γῆς τε βάθη καὶ δαψιλὸς αἰθήρ.* Similarly, *De Mel.* c. 2, 976 a, 32: *ὡς καὶ Ξενοφάνης ἄπειρον τό τε βάθος τῆς γῆς καὶ τοῦ ἀέρος φησὶν εἶναι*, &c. The same is repeated by Plut. ap. Eus. *Pr. Ev.* i, 8, 4; *Plac.* iii. 9, 4 (Galen, c. 21); Hippolyt. i. 14; Kosmas Indicopl. p. 149; Georg. Pachym. p. 118; vide Brandis, *Comm. El.* 48; Karsten, 154; Cousin, 24 sq.

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[1] Vide p. 549, 1; 560, 2.

[2] *Supra*, p. 562, 1, and Plut. *Plac.* ii. 4. 3 (Stob. i. 416), Ξενοφάνης (Stob. has instead Μέλισσος; in one MS., however, there is written in the margin, Ξενοφάνης, Παρμενίδης Μέλ.) ἀγέννητον καὶ ἀΐδιον καὶ ἄφθαρτον τὸν κόσμον. Cf., however, p. 570, 1.

[3] Cf. p. 570, 1.

[4] Plut., Cic., Hippol., and others, vide p. 562, 5.

These physical theories of Xenophanes have scarcely any connection with the fundamental ideas of his philosophy. They are isolated observations and conjectures, sometimes pregnant and suggestive, but sometimes of a rudimentary and child-like kind, such as we might expect in the commencement of natural science. We will now, however, shortly state what has been preserved of them.

According to some, Xenophanes said that earth was the primitive substance of all things; according to others, earth and water.[4] But the verses on which these statements are founded appear to deal only with terrestrial things,[1] and, therefore, to assert nothing but what we find very commonly elsewhere.[2] Aristotle, in enumerating the elementary primitive substances of the ancient philosophers, not merely does not mention Xenophanes, but says[3] that none of those philosophers who admitted only one primitive substance, adopted the earth as such. Thus he expressly excludes the first of the above statements; and we cannot suppose him to be confirming the second[4] when he names the dry and the moist among the primitive substances;[5] for he repeatedly designates Parmenides as the only philosopher of the Eleatics who, side by side with the One substance, admitted two opposite elements.[6] On the other hand, later writers had some reason for interpreting the verse of Xenophanes in this sense, since Xenophanes supposed the stars (*vide infra*) to originate from the vapours of the earth and water. The theory that he regarded the earth itself as a combination of air and fire[7] is certainly incorrect,[8] and it

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[1] The references, *l. c.*, vide p. 539, 2.

[2] Aristotle indeed says of the Eleatics generally, ἀκίνητον εἶναί φασιν, but the subject of ἀκίνητον is not τὸ πᾶν, but τὸ ἕν.

[3] As Braniss says (*Gesch. d. Phil.* Kant, i. 115), and Ritter i. 477, fancies he sees in Fr. 15, 18.

[4] Both opinions are mentioned by Sextus *Math.* x. 313 f; Hippol. *Refut.* x. 6 sq., p. 498, who each quotes the verse of Xenophanes from which they are severally taken, the one from Fr. 8: ἐκ γαίης γὰρ πάντα καὶ εἰς γῆν πάντα τελευτᾷ, the other from Fr. 9: πάντες γὰο γαίης τε καὶ ὕδατος ἐκγενόμεσθα. Cf. Fr. 10: γῆ καὶ ὕδωρ πάνθ' ὅσσα γίνονται ἠδὲ φύονται. For the first (cf. Brandis, *Comm.* 44 sq.; Karsten, 45 sqq.;

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146 sqq.) we have Plut. ap. Eus., *l. c.*; Stob. *Ecl.* i. 294; Hippol. i. 14; Theod. *Cur. Gr. Aff.* ii. 10, p. 22; iv. 5, p. 56; for the second, Sext. *Math.* ix. 361; *Pyrrh.* iii. 30; Porph. ap. Simpl. *Phys.* 41 a; Philop. *Phys.* D, 2 (Schol. *in Arist.* 338 b, 30; 339 a, 5, cf. *sup.* p. 272, 2); Ps.-Plut. (possibly Porphyry) *V. Hom.* 93; Eustath. *in Il.* vii. 99; Galen, *H. Phil.* c. 5, p. 243; Epiph. *Exp. fid.* p. 1067 B.

[1] When, therefore, Sabinus ap. Galen in Hipp. *De Nat. Hom.* i. p. 25 K, says that Xenophanes declared earth to be the substance of men (not of all things, as Karsten, 150, states), he is right, and Galen's severe censure is, as Brandis acknowledges, undeserved.

[2] We need only remember the words in 1 *Mos.* 3, 19, or *Il.* vii. 99: *ὕδωρ καὶ γαῖα γένοισθε.*

[3] *Metaph.* i. 8, 989 a.

[4] As Porphyry maintains, *l. c.*

[5] *Phys.* i. 5, 188 b, 33: *οἱ μὲν γὰρ θερμὸν καὶ ψυχρὸν οἱ δ' ὑγρὸν καὶ ξηρὸν* (*ἀρχὰς λαμβάνουσι*).

[6] *Metaph.* i. 4, 5, 984 b, 1; 986 b, 27 sqq.

[7] Plut. *Plac.* iii. 9 (Galen, c. 21): *ἐξ ἀέρος καὶ πυρὸς συμπαγῆναι.*

[8] Brandis, *Gr. Röm. Phil.* i.

may, perhaps, be in consequence of a similar misapprehension that the doctrine of the four elements came to be ascribed to him.[1] It was, no doubt, easy for later writers to find their four primitive elements in every cosmology; but this doctrine is distinctly asserted by Aristotle [2] to have originated with Empedocles, and its connection with the metaphysics of Parmenides is too obvious for us to suppose that a predecessor of Parmenides should not merely have mentioned in an incidental manner fire, water, etc., but should have expressly designated the four elements as the basis of all compound bodies.

There is, doubtless, more foundation for the theory that Xenophanes supposed the earth to have passed from a fluid condition into its present solid state, and that in time it would again by means of water be changed into mud. He had observed petrified marine creatures on land, and even on mountains, and knew not how to account for this phenomenon except on the supposition that the world, or at any rate the surface of the world, was subject to a periodical transition from the fluid state to the solid, and back to the fluid state again; in which transition the human race, together with its dwelling place, must sink into the water

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372, conjectures that Xenophanes, as often elsewhere, is here confused with Xenocrates; but Plut. *Fac. lun.* 29, 4, p. 944, does not countenance this opinion. Karsten, p. 157, explains the remark by saying that Xenophanes thought air and fire, i.e., steam and heat, were developed out of the earth. The most probable explanation, however, seems to me that of Ritter, i. 479; cf. Brandis, *Comm. El.* 47. According to this, the words in their original connection only signify that the earth passed from a fluid condition to a solid by the action of air and of fire.

[1] Diog. ix. 19.

[2] *Metaph.* i. 4, 985 a, 31.

and begin afresh at each restoration of the dry land.[1] He might have brought this theory into connection with his philosophic opinions through the doctrine that the one divine essence is alone unchangeable, while everything earthly is subject to perpetual change.[1] Later writers see in the innumerable formations of the world an innumerable succession of worlds,[2] which is certainly incorrect; yet this statement may have been due to the theories of Xenophanes about the constellations. He regarded the sun, moon and stars (as well as the rainbow[3] and other celestial phenomena),[4] as

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[1] Hippolyt. i. 14: *ὁ δὲ Ξ. μῖξιν τῆς γῆς πρὸς τὴν θάλασσαν γενέσθαι δοκεῖ καὶ τῷ χρόνῳ ἀπὸ τοῦ ὑγροῦ λύεσθαι, φάσκων τοιαύτας ἔχειν ἀποδείξεις. ὅτι ἐν μέσῃ γῇ καὶ ὄρεσιν εὑρίσκονται κόγχαι, καὶ ἐν Συρακούσαις δὲ ἐν ταῖς λατομίαις λέγει εὑρῆσθαι τύπον ἰχθύος καὶ φωκῶν, ἐν δὲ Πάρῳ τύπον ἀφύης ἐν τῷ βάθει τοῦ λίθου, ἐν δὲ Μελίτῃ πλάκας συμπάντων θαλασσίων.* (These facts of palæontology seem first to have been observed by Xenophanes; that they gave matter of reflection to later writers may be seen from Herod. ii. 12; Theoph. Fr. 30, 3; Strabo, i. 3, 4, p. 49 sq.) *ταῦτα δέ φησι γενέσθαι ὅτε πάντα ἐπηλώθησαν πάλαι, τὸν δὲ τύπον ἐν τῷ πηλῷ ξηρανθῆναι, ἀναιρεῖσθαι δὲ τοὺς ἀνθρώπους πάντας ὅταν ἡ γῆ κατενεχθεῖσα εἰς τὴν θάλασσαν πηλὸς γένηται, εἶτα πάλιν ἄρχεσθαι τῆς γενέσεως καὶ τοῦτο πᾶσι τοῖς κόσμοις γίνεσθαι καταβάλλειν* (Dunck.: *καταβολὴν*, perhaps it should be *καταλλήλως*). Cf. Plut. ap. Eus. *Pr. Ev.* i. 8, 4: *ἀποφαίνεται δὲ καὶ τῷ χρόνῳ καταφερομένην συνεχῶς καὶ κατ' ὀλίγον τὴν γῆν εἰς τὴν θάλασσαν χωρεῖν.* These statements seem too explicit to leave room for Teichmüller's theory that Xenocrates believed in man's having eternally existed on the earth (*Stud. z. Gesch. d. Begr.* 604; *Neue Stud.* etc. i. 219). There is no evidence of such a theory, and it does not follow from the eternity of the world, even if Xenophanes held that doctrine. For Hippolytus says (and there is no ground for contradicting him) that Xenophanes supposed the human race to have been destroyed at each periodical submerging of the earth, and to have begun anew at each renovation. But even the eternity of the world is not proved to have been a doctrine of Xenophanes, either by the testimony of the *Placita*, quoted p. 566, 2, or by the statements of more recent authors, quoted p. 562, 5, who make no distinction between what the philosopher asserts about God and what he says of the universe. At any rate, we cannot, on the strength of such evidence, charge Aristotle, who denies that any of his predecessors held the eternity of the world (*De Cælo*, 1, 10, 279 b, 12) with an error, or, as Teichmüller does, with a malicious and wilful misunderstanding (vide Teichmüller, *Neue Stud.* etc. i. 218, cf. p. 239 and 229 sqq., discussions which, however, contain nothing new, and pay no regard to my explanation in *Hermes*, x. 186 sq., nor to that of my present work, p. 352, 3rd edition). In reality there is no irreconcilable contradiction between Aristotle's assertion and the opinion attributed to Xenophanes. When Aristotle speaks of the eternity of the world, he means not merely eternity in regard to its matter, but in regard to its form; the eternity of this our universe; and he therefore reckons Heracleitus, in spite of his famous declaration, among those who believe the world to have had a beginning (cf. *inf.* vol. ii.). It is impossible that a philosopher like Xenophanes, who held that the earth from time to time sank into the sea, and was periodically formed anew, and that the sun

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and stars arose afresh each day and night, and again disappeared, could have conceived this world as having had no beginning. He might say that the All, *i.e.*, the collective mass of matter, had no beginning; but the form assumed by this matter he must have supposed to change. Aristotle, therefore, could not have ascribed to him the doctrine of the eternity of the world in his (Aristotle's) sense, any more than to Heracleitus and Empedocles. Diog. (vide *infra*, note 2) and Hippolytus (*i.e.* the authors whom they follow) find in him the theory of many (successive) worlds.

[1] We have seen the same in Epicharmus, p. 531, 1.

[2] Diog. ix. 19: κόσμους δ' ἀπείρους ἀπαραλλάκτους δέ. Instead of ἀπαραλλ. Karsten reads οὐκ ἀπαρ., Cobet παραλλάκτους. If we read ἀπαραλλάκτους, we make Xenophanes to have held that each successive world was exactly like its predecessor, as the Stoics thought (cf. Pt. iii. a, 141, 2 A); according to the reading of Karsten and Cobet, he must have denied this. Probably both readings are incorrect, and ἀπαραλλάκτους or οὐκ ἀπαραλλάκτους may have been evolved out of some unimportant expression by a later writer who, when he heard of Xenophanes' innumerable worlds, immediately wished to know how he regarded the vexed question of their likeness or unlikeness. Cousin, p. 24, translates ἀπαραλλάκτους as '*immobile*,' and understands by the ἄπειροι κόσμοι ἀπαράλλακτοι the immeasurable substructure of the earth, which naturally has no concern with either view. Stob. *Ecl.* i. 496 (*supra*, p. 262, 3), and after the same authority, Theod. *Cur. Gr. Aff.* iv. 15, p. 58, class Xenophanes, Anaximander, Anaximenes, etc., and Democritus and Epicurus together (without farther distinction) as adherents of the doctrine of innumerable worlds.

[3] Fr. 13 ap. Eustath. *in Il.* xi. 27, and other Scholiasts:

ἥν τ' Ἶριν καλέουσι, νέφος καὶ τοῦτο πέφυκε
πορφύρεον καὶ φοινίκεον καὶ χλωρὸν ἰδέσθαι.

[4] Stob. i. 580; *Plac.* iii. 2, 12 (under the title: περὶ κομητῶν καὶ διαττόντων καὶ τῶν τοιούτων): Ξ. πάντα τὰ τοιαῦτα νεφῶν πεπυρωμένων συστήματα ἢ κινήματα (πιλήμ. Cf. *Plac.* ii. 25, 2; Stob. i. 510).

aggregations of burning and luminous vapours, in a word as fiery clouds,[1] which at their setting were extinguished like embers, and at their rising were kindled,[2] or rather formed, anew;[3] this occurred likewise, he thought, in solar and lunar eclipses.[4] These masses of vapour (this is, at any rate, expressly said in regard to the sun) were not supposed to move in a circle around the earth, but in an endless straight line above it; and if the course appears to us circular, this is only an optical delusion, as in the case of the other clouds which, when they approach the zenith, seem to our eyes to ascend, and when they go under the horizon, to sink. It follows from this that new stars must be continually appearing above our horizon, and that parts of the earth widely separated from each other must be enlightened by different suns[5] and moons.

Concerning lightning and the Dioscuri, cf. Stob. p. 514, 592; Plut. *Plac.* ii. 18; Galen, c. 13.

[1] Stob. *Ecl.* i. 522: Ξ. ἐκ νεφῶν πεπυρωμένων εἶναι τὸν ἥλιον . . . Θεόφραστος ἐν τοῖς φυσικοῖς γέγραφεν (τὸν ἥλιον εἶναι, after Xenophanes) ἐκ πυριδίων μὲν τῶν συναθροιζομένων ἐκ τῆς ὑγρᾶς ἀναθυμιάσεως συναθροιζόντων δὲ τὸν ἥλιον. Similarly as to the moon, p. 550. The same is asserted in Hippol. *l. c.*; Plut. ap. Eus. *l. c.*; *Plac.* ii. 20, 2, 25, 2; Galen, *H. phil.* c. 14, 15. Instead of ὑγρὰ ἀναθυμίασις, Galen has ξηροὶ ἀτμοί. Cf. on this point, Karsten, p. 161 sq.

[2] Achill. Tat. *Isag. in Arat.* c. 11, p. 133: Ξ. δὲ λέγει τοὺς ἀστέρας ἐκ νεφῶν συνεστάναι ἐμπύρων καὶ σβέννυσθαι καὶ ἀνάπτεσθαι ὡσεὶ ἄνθρακας· καὶ ὅτε μὲν ἅπτονται φαντασίαν ἡμᾶς ἔχειν ἀνατολῆς, ὅτε δὲ σβέννυνται δύσεως. Somewhat to the same effect, Stob. i. 512; Plut. *Plac.* ii. 13, 7; Galen, c. 13, p. 271; Theod. *Cur. Gr. Aff.* iv. 19, p. 59; Hippol. *l. c.*: τὸν δὲ ἥλιον ἐκ μικρῶν πυριδίων ἀθροιζομένων γίνεσθαι καθ' ἑκάστην ἡμέραν.

[3] Vide p. 572, 5.

[4] Stob. i. 522, 560; Plut. *Plac.* ii. 24, 4; Galen, c. 14, p. 278; *Schol. ad Plato Rep.* 498 A (p. 409 Bekk.).

[5] Such is the inference from Stob. i. 534 (*Plac.* ii. 24, 7; Galen, c. 14); Ξ. πολλοὺς εἶναι ἡλίους καὶ σελήνας κατὰ τὰ κλίματα τῆς γῆς καὶ ἀποτομὰς καὶ ζώνας, κατὰ δέ τινα καιρὸν ἐκπίπτειν τὸν δίσκον εἴς τινα ἀποτομὴν τῆς γῆς οὐκ οἰκουμένην ὑφ' ἡμῶν, καὶ οὕτως ὡσπερεὶ κενεμβατοῦντα ἔκλειψιν ὑποφαίνειν· ὁ δ' αὐτὸς τὸν ἥλιον εἰς ἄπειρον μὲν προϊέναι δοκεῖν δὲ κυκλεῖσθαι διὰ τὴν

As to the rest of the physical propositions attributed to Xenophanes, some, it is certain, do not belong to him,[1] and others contain too little that is characteristic of his doctrine, to require particular mention.[2] The

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ἀπόστασιν. Cf. Hippol. *l. c.*: *ἀπείρους ἡλίους εἶναι καὶ σελήνας*. That Xenophanes really entertained these notions would not be adequately proved by such recent and untrustworthy evidence, if the agreement of all these cosmological indications and their peculiar character belonging to the first childhood of astronomy did not vouch for their truth. Even the obvious suspicion of some confusion with Heracleitus must vanish on closer examination, for the ideas of the two philosophers, though in many respects similar, have much that is essentially distinct. The remark of Karsten, p. 167, that Xenophanes could not have believed there were several suns and moons in the heavens at the same time, and that consequently this statement must have arisen from a confusion between successive suns and moons, and suns and moons side by side with one another,—is refuted by what has been said in the text. Teichmüller (*Stud. z. Gesch. d. Begr.* 601, 621) observes that since the earth, according to Xenophanes, was unlimited in a downward direction, the heavens could not revolve around it, and consequently Xenophanes must have denied the rotation of the heavens, but this is not to the point. The infinite extent of the earth (conceived as shaped like a cylinder) downward, did not interfere with the notion of the stars revolving around it in orbits which, sometimes rising above the plane of the horizon, sometimes sinking below it, turn around the earth laterally, provided only that the inclination of these orbits in regard to the horizon were not such as to cause the stars to go under the earth itself. That the revolution of the heavens is lateral was the opinion also of Anaximenes, Anaxagoras, Diogenes, and Democritus.

[1] For instance, the statement of the Pseudo-Galen (*H. Phil.* c. 13), that Xenophanes believed all the orbits of the stars to lie in the same plane; in regard to a passage where Stob. i. 514, and Plut. *Plac.* ii. 15, have more correctly Xenocrates instead of Xenophanes, and the assertion of Cicero, *Acad.* ii. 39, 123, repeated by Lactantius, *Instit.* iii. 23, and defended by Cousin, 22, that the moon was said by Xenophanes to be inhabited. Brandis, *Comm.* 54, 56, and Karsten, p. 171, remark that both these authors confuse Xenophanes with other philosophers (e.g. Anaximander, Anaxagoras, Philolaus).

[2] We are told that he attributed the salt taste of sea water to its mixture with terrestrial elements (Hippol. *l. c.*); clouds, rain, and wind, he thought, arose from vapours, which the sun's heat caused to escape from the sea (Stob. extracts from Joh. Damasc. *Parall.* i. 3; *Floril.* vol. iv. 151, Mein.; Diog. ix. 19); the moon shines by her own light (Stob. i. 556), and has no influence on the

ethical portions of his fragments cannot, strictly speaking, be included in his philosophy, because admirable and philosophical as is the spirit revealed in them, he never brought his ethics into scientific connection with the universal bases of his cosmical theory. The poet censures the former luxury of his compatriots;[1] he deplores on the other hand that bodily strength and agility bring more honour to a man than wisdom, which is far more valuable to the state;[2] he disapproves oaths as a means of proof, because he sees in them a reward for godlessness.[3] He advocates cheerful feasts, seasoned with pious and instructive talk, but he condemns empty conversation, together with the mythical creations of the poets.[4] Although this betrays the friend of science and the enemy of myths, yet on the whole these sayings do not transcend the point of view of the popular gnomic wisdom. It would be more important, were the assertion correct, that Xenophanes either wholly denied the possibility of knowledge, or restricted it to the doctrine of the Deity; or, as others say, that he recognised the truth of the perception of reason only, and not of the perception of sense.[5] The expressions,

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earth (*ibid.* 561). The soul, according to the ancient notion, he considered to be air (Diog. ix. 19; cf. Tert. *De An.* c. 43). Brandis *Comm. El.* 37, 57, deduces from this passage, and Xen. Fr. 3, that Xenophanes placed *νοῦς* above the ψυχὴ, and the *φρένες* above *νοῦς*; but I can find it neither in Diogenes nor Xenophanes, nor can I consider it to be the real doctrine of this philosopher.

[1] *Fr.* 20, ap. Athen. xii. 324 b; cf. the anecdotes, ap. Plut. *De Vit. Pud.* 5, p. 530.

[2] *Fr.* 19; ap. Athen. x. 413.

[3] Arist. *Rhet.* i. 15, 1377 a, 19, of which Karsten most arbitrarily makes a verse.

[4] Fr. 17, 21; ap. Athen. ii. 54 e; xi. 462 c. 782 a (1036 Dind.).

[5] Diog. ix. 20: *φησὶ δὲ Σωτίων πρῶτον αὐτὸν εἰπεῖν ἀκατάληπτ' εἶναι τὰ πάντα, πλανώμενος.* *Ibid.* ix. 72 of the Pyrrhonists: *οὐ μὴν ἀλλὰ καὶ Ξενοφάνης*, etc., *κατ' αὐτοὺς σκεπτικοὶ τυχάνουσιν.* Didymus, ap. Stob. *Ecl.* ii. 14: Xenophanes first

however, from which the statement is derived have by no means this scope and compass. Xenophanes observes that truth is only discovered by degrees.[1] He thinks that perfect certainty of knowledge is not possible; if even a man should hit upon the truth in a matter, he is never absolutely certain that he has done so; and, therefore, Xenophanes designates his own views, even on the weightiest questions, merely as probabilities.[2] But this modesty of the philosopher ought not to be mistaken for a sceptical theory, though it

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taught that ὡς ἄρα θεὸς μὲν οἶδε τὴν ἀλήθειαν, δόκος δ' ἐπὶ πᾶσι τέτυκται. Sext. *Math.* vii. 48, f: καὶ δὴ ἀνεῖλον μὲν αὐτὸ [τὸ κριτήριον] Ξενοφάνης τε, etc. Similarly Pyrrh. ii. 18: ὧν Ξενοφ. μὲν κατά τινας εἰπὼν πάντα ἀκατάληπτα, etc. *Ibid.* 110: Ξενοφ. δὲ κατὰ τοὺς ὡς ἑτέρως αὐτὸν ἐξηγουμένους . . . φαίνεται μὴ πᾶσαν κατάληψιν ἀναιρεῖν, ἀλλὰ τὴν ἐπιστημονικήν τε καὶ ἀδιάπτωτον, ἀπολείπει τὴν δοξαστήν. According to this, adds Sextus, he would have made λόγος δοξαστὸς the criterion. The former theory is adopted by Hippol. *l. c.*: οὗτος ἔφη πρῶτος ἀκαταληψίαν εἶναι πάντων, Epiph. *Exp. Fid.* 1087 B: εἶναι δὲ . . . οὐδὲν ἀληθὲς, etc., and Plut. ap. Eus. *l. c.*: ἀποφαίνεται δὲ καὶ τὰς αἰσθήσεις ψευδεῖς καὶ καθόλου σὺν αὐταῖς καὶ αὐτὸν τὸν λόγον διαβάλλει; the second by Proclus *in Tim.* 78 B. Disagreeing with both, Timon censures Xenophanes (vide *infra*, p. 576, 1) for admitting on the one hand the incognisability of things, and on the other the unity of Being; and the *Hist. Phil.* of Galen, c. 3, p. 234, says the same of him. Aristocles lastly (Eus. *Pr. Ev.* xiv. 17, 1) includes his point of view with that of the other Eleatics and Megarics in the proposition: δεῖν τὰς μὲν αἰσθήσεις καὶ τὰς φαντασίας καταβάλλειν, αὐτῷ δὲ μόνον τῷ λόγῳ πιστεύειν. In the utterance of Aristotle with which this passage is connected (*infra*, § *Melissus*) Melissus alone is in question. It has already been shown (p. 531, 1; 558, 1) that Arist. *Metaph.* iv. 5, *Poet.* 25 has no connection with it.

[1] Fr. 16 b; Stob. *Ecl.* i. 224; *Floril.* 39, 41:—

οὔ τοι ἀπ' ἀρχῆς πάντα θεοὶ θνητοῖς
ὑπέδειξαν,
ἀλλὰ χρόνῳ ζητοῦντες ἐφευρίσκουσιν
ἄμεινον.

[2] Fr. 14, ap. Sext. *l. c.*:—

καὶ τὸ μὲν οὖν σαφὲς οὔτις ἀνὴρ
γένετ' οὐδέ τις ἔσται
εἰδὼς, ἀμφὶ θεῶν τε καὶ ἅσσα λέγω
περὶ πάντων·
εἰ γὰρ καὶ τὰ μάλιστα τύχοι τετελεσμένον εἰπὼν,
αὐτὸς ὅμως οὐκ οἶδε· δόκος δ' ἐπὶ
πᾶσι τέτυκται

(to have an opinion is free to all), ap. Fr. 15; Plut. *Qu Conv.* ix. 14, 7: ταῦτα δεδόξασται μὲν ἐοικότα τοῖς ἐτύμοισι.

arose, no doubt, from a sceptical temperament. For the uncertainty of knowledge is not here based on a general enquiry into the intellectual faculty of man, it is simply maintained as the result of personal experience; consequently, the philosopher is not hindered, by the consideration of it, from advancing his theological and physical propositions with full conviction. Even the later division of the cognition of reason from the deceptive perception of sense has not been made as yet —philosophic theories are placed on an equality with all other theories; for this division is founded by the Eleatics on the denial of Becoming and Plurality which the senses show us; and to this denial, as we have already seen, Xenophanes did not proceed.[1]

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[1] This is otherwise explained by Cousin, p. 48 sq., and by Kern, *Beitr.* 4; *Xenoph.* 13. Cousin thinks that the verses of Xenophanes refer to the polytheistic notions of his contemporaries, and that Xenophanes was only sceptical in regard to these. But his words seem to have a more general meaning, and his criticism of polytheism cannot be called sceptical, as his attitude is not uncertain towards it, but hostile. Kern is of opinion that Xenophanes distinctly enunciated his doctrine of the One only in his later life, after having long contented himself with doubting the views of others. In support of this, he appeals to Timon's verses, ap. Sext. *Pyrrh.* i. 224, which represents him as complaining: *ὡς καὶ ἐγὼν ὄφελον πυκινοῦ νόου ἀντιβολῆσαι ἀμφοτερόβλεπτος· δολίῃ δ' ὁδῷ ἐξαπατήθην πρεσβυγενὴς ἐτέων καὶ ἀμενθήριστος* (unmindful, probably) *ἁπάσης σκεπτοσυνῆς. ὅππῃ γὰρ,* etc. (vide *sup.* p. 562, 4). But *πρεσβυγενὴς* does not imply that he *first* arrived at the theory of the unity of Being in his old age, having previously been a sceptic, but that in spite of his age (or also from the weakness of age) he had maintained the standpoint of scepticism. This could not have been said if he had brought forward his doctrine of the Unity of Being at the same time and in the same poem, as the utterances (quoted above) which have a sceptical interpretation. He himself, Fr. 14 (vide previous note), in the words which sound most sceptical, refers to what he had taught respecting the gods and the world (for even if *ἀμφὶ θεῶν* is primarily to be connected with *εἰδὼς*, the words 'concerning the gods, and concerning all of which I speak,' imply that he had also spoken of the gods); we cannot, therefore, suppose that his sceptical utterances belong to an earlier epoch than his dogmatical.

There is all the less reason for ascribing to him, as some of the ancient writers do, logical enquiries as well as physical,[1] or for classing him with the later Eristics.[2] His doctrine is rather Physics in the ancient and more comprehensive sense, and though it is far removed from other *purely* physical theories, yet its physical character comes out so clearly, when we compare it with the more abstract propositions of Parmenides, that it has been not inaptly described as the link of transition from the Ionian enquiry to the completed Eleatic doctrine of pure Being.[3] Xenophanes, according to Theophrastus, was himself a disciple of Anaximander,[4] and there is nothing against the theory that he was first induced by that philosopher to study the nature and causes of the world. It is true that he followed his predecessor only in regard to a few comparatively subordinate points, whereas the main tendency of his thought pursued another course, and led to other results. Like Anaximander, he supposed the earth and its inhabitants to have originated from the drying up of the primitive slime;[5] Anaximander held that the universe alternately sprang from the primitive matter, and returned to it again, and Xenophanes taught the same in regard to the earth, which for him is the most important part of the universe. His opinion that the heavenly bodies are merely masses of vapour[1] reminds us of the earlier doctrine that their fires are nourished by the exhalations of the earth;[2] and the infinite extension of the earth beneath, and the air above,[3] recalls the unlimitedness of Anaximander's primitive matter. But the theories of Xenophanes about the universe generally are widely different from the system of Anaximander. Anaximander makes, at any rate, an attempt to explain the formation and constitution of the universe in a physical manner. Of Xenophanes we are told nothing of the kind, and his conception of the stars shows clearly how little the naturalistic treatment of phenomena suited his mental tendency. He enquires, indeed, concerning the principle of things, but the enquiry immediately takes a theological turn, leading him to test the current opinions concerning the beings in whom the ultimate cause is usually sought,—to the criticism of the belief in gods—and thus to the thought of the One eternal unchangeable Being who is not to be compared with any finite thing. His philosophy is only naturalistic in regard to its point of departure; in its development it becomes a theological metaphysic.[1] But since the primitive essence is not apprehended in a purely metaphysical manner as Being without further specific determination, but theologically as the Deity, or as the divine spirit ruling in the universe, Xenophanes is not obliged to dispute the reality of the Many and the changeable, or to declare the phenomenon to be a deceptive appearance. He says, it is true, that every thing in its deepest principle is eternal and One, but he does not deny that, side by side with the One, there exists a plurality of derived and transitory things; and he passes over, apparently without observing it, the difficulty which, from his own point of view, is involved in this theory and the problem which it proposes for enquiry. Parmenides was the first who recognised this, and who carried out the Eleatic doctrine in opposition to the popular notions with logical consistency, and regardless of results.

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[1] Sext. *Math.* vii. 14: *τῶν δὲ διμερῆ τὴν φιλοσοφίαν ὑποστησαμένων Ξ. μὲν ὁ Κολοφώνιος τὸ φυσικὸν ἅμα καὶ λογικὸν, ὥς φασί τινες, μετήρχετο.*

[2] Aristocles, ap. *Eus. Pr. Ev.* xi. 3, 1: Ξ. *δὲ καὶ οἱ ἀπ' ἐκείνου τοὺς ἐριστικοὺς κινήσαντες λόγους πολὺν μὲν ἐνέβαλον ἴλιγγον τοῖς φιλοσόφοις, οὐ μὴν ἐπόρισάν γέ τινα βοήθειαν.*

[3] Brandis, *Gr. Röm. Phil.* i. 359. The view of Cousin is less correct (*l. c.* p. 40, 46). He sees in the system of Xenophanes a union of Ionian and Pythagorean elements, but the theological doctrines of Xenophanes are more likely to have come from him to the Pythagoreans than vice versâ. The chronology also is against this theory, especially if Cousin is right in placing Xenophanes' birth in the year 617 B.C.

[4] Cf. Diog. ix. 21, quoted *infra*, *Parm.*, note 1.

[5] Cf. p. 569, with p. 255, 251, 1.

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[1] Cf. p. 252.

[2] According to the *Plac.* ii. 25, 2, Xenophanes thought the moon was a *νέφος πεπιλημένον*, and that the comets and similar phenomena were *πιλήματα νεφῶν*, in the same way that Anaximander, according to Stob. *Ecl.* i. 510, regarded the stars as *πιλήματα ἀέρος*. This seems to me of little consequence; for we do not know whether Xenophanes himself used the expression; and if he did, his meaning could not have been the same as Anaximander's. He meant a firm combination, and Anaximander merely a loose aggregation.

[3] *Sup.* p. 565, 5.

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[1] Teichmüller (*Stud. z. Gesch. d. Begr.* 612) is so far quite right in his remark that 'metaphysics with Xenophanes sprang, not from the consideration of nature, but from the conflicts of Reason with the existing theology.' Only it is rather inconsistent with this that we should be told also, in relation to Xenophanes (*ibid.* 620, 598), 'If we would understand the metaphysics of the ancient philosophers, we must first study their theories of nature.' Even in itself, as it seems to me, this proposition is not universally true of the pre-Socratics (it is only in a certain sense that we can ascribe to them any distinction between metaphysics and natural enquiries at all); and among those to whom it is inapplicable, I should name Parmenides, Heracleitus, and Xenophanes. I cannot discover from Teichmüller's exposition in what manner his theories of the Deity and the unity of the world can have arisen out of the very few physical propositions that have come down to us. Even Anaximander's *ἄπειρον* is in no way connected with them. Teichmüller (p. 620 sq.) indeed thinks that Xenophanes denied the movement of the universe, because the circular motion ascribed to it by Anaximander would only be possible if the earth hung in the midst of the air, and this seemed to him much too improbable. The idea appears to me far-fetched, and it has two considerations against it—1, that Xenophanes (as observed on p. 570, 1), though he denied the creation and destruction of the world, yet expressly maintained a periodical change in its conditions; and 2, that Anaximander (cf. p. 252, 1) did not believe in a circular movement of the *universe*, and the rotation of the *heavens*, which, he taught, would be quite compatible with the unlimitedness of the subterranean region of the earth (cf. p. 572, 5).

PARMENIDES.[1]

The great advance made by the Eleatic philosophy in Parmenides ultimately consists in this, that the unity of all Being, the fundamental idea of the Eleatics, was apprehended by him in a much more definite manner

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[1] Parmenides of Elea was the son of Pyres or Pyrrhes, Theophrast. ap. Alex. *in Metaph.* i. 3, 984 b, 1; Diog. ix. 21; Suid. *sub voc.*; Theod. *Cur. Gr. aff.* iv. 7, p. 57; also ap. Diog. ix. 25, where (according to the usual reading) he is called the son of Teleutagoras; whether, with Cobet, who may or may not be following the evidence of MSS., we omit the words Πύρητος τὸν δὲ Παρμενίδην, or with Karsten, *Phil. Græc. Rell.* i. b, 3, alter their position thus: Ζήνων Ἐλεάτης· τοῦτον Ἀπολλόδωρός φησιν εἶναι ἐν χρονικοῖς φύσει μὲν Τελευταγόρου, θέσει δὲ Παρμενίδου· τὸν δὲ Παρμενίδην Πύρητος. He came of a wealthy and distinguished family, and we are told first joined the Pythagoreans. At the instance of Ameinias, the Pythagorean, he embraced the philosophic life, and conceived such a veneration for Diochaites, likewise a Pythagorean, that he erected a ἡρῷον to him at his death (Sotion ap. Diog. *l. c.*). By more recent authors he is himself called a Pythagorean (Strabo, 27, 1, 1, p. 252: Ἐλέαν . . ἐξ ἧς Παρμενίδης καὶ Ζήνων ἐγένοντο ἄνδρες Πυθαγόρειοι. Callimachus ap. Procl. *in Parm.* t. iv. 5 Cous.; Iambl. *V. P.* 267, cf. 166; Anon. Phot. *Cod.* 249, p. 439 a, 35), and a Parmenidean life is spoken of as synonymous with the Pythagorean (Cebes, *Tab.* c. 2: Πυθαγόρειόν τινα καὶ Παρμενίδειον ἐζηλωκὼς βίον). In his philosophic opinions, however, he mostly resembled Xenophanes, whose scholar and acquaintance he is asserted to have been, though less decidedly by Aristotle (*Metaph.* i. 5, 986 b, 22: ὁ γὰρ Π. τούτου λέγεται μαθητής) than by others: Plut. ap. Eus. *Pr. Ev.* i. 8, 5; Eus. *ibid.* xiv. 17, 10, cf. x. 14, 15; Clem. *Strom.* i. 301 D; Diog. *l. c.*; Simpl. *Phys.* 2 a; Sext. *Math.* vii. 111; Suid. Παρμ.; on the other hand, Theophrast. *ap. Alex l. c.* says only: τούτῳ [Ξενοφάνει] ἐπιγενόμενος Παρμ. He could not, however, have remained altogether unacquainted with him, as both lived together for some time in Elea. The two assertions are compatible, if we suppose Parmenides to have been closely and personally connected with the Pythagoreans, and to have learned much from them in regard to his moral life; but in regard to his philosophic conviction, to have been chiefly influenced by Xenophanes, and, like Empedocles, to have approved of the Pythagorean life, but not to have been an adherent of the Pythagorean system. (This is probably the meaning of Diogenes,

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l. c., when he says: *ὅμως δ' οὖν ἀκούσας καὶ Ξενοφάνους οὐκ ἠκολούθησεν αὐτῷ*, *ἀκολουθεῖν* designating here, as also in what follows, intimate and personal relation.) On the other hand, it is inconsistent with all that we know as to the date of the two philosophers, that Parmenides should have been taught by Anaximander. When, therefore, Diog. *l. c.* says: *Παρμενίδης διήκουσε Ξενοφάνους, τούτου Θεόφραστος ἐν τῇ ἐπιτομῇ Ἀναξιμάνδρου φησὶν ἀκοῦσαι*, *τοῦτον* must not be applied to Parmenides, but to Xenophanes; and when Suidas says of Parmenides that, according to Theophrastus, he was a disciple of Anaximander, he has evidently misunderstood the passage of Diog. which he quotes. There is a surprising statement (cf. Marc. Capella, *De Nupt. M. et V.* i. 4) by some scholastics that Parmenides learned logic and astronomy in Egypt, on which cf. Brandis, *Comm.* 172; Karsten, p. 11 sq., *Notices et Extraits des Manuscrits*, t. xx. b, 12 (from Remigius of Auxerre); cf. *Schol. in Arist.* 533 a, 18 sqq. The time at which Parmenides lived is, indeed, known in general, but to fix it precisely is difficult. Diog. ix. 23, places his prime (doubtless after Apollodorus) in the 69th Olympiad (504–500 B.C.), and, therefore, to assign the 79th (in accordance with Scaliger ap. Karsten, p. 6; Fülleborn, *Beitr.* vi. 9 sq.; Stallbaum Plat. *Parm.* 24 A sq.; *Theæt.* 183 *E. Soph.* 217 C) appears to me exceedingly hazardous. Whether Apollodorus, however, founds his calculation on definite data, and not merely (as Diels thinks (*Rh. Mus.* xxxi. 34 sq.), on the general synchronism with Heracleitus, is uncertain. On the other hand, Plato (*Parm.* 127 A sq.; *Theæt.* 183 E: *Soph.* 217 C) represents Socrates in very early youth (*σφόδρα νέος*) as meeting Parmenides and Zeno in Athens; Parmenides being then about 65, and Zeno about 40: and on this occasion the dialectic discussions in the dialogue bearing his name are placed in the mouth of Parmenides. Supposing Socrates at that date to have been only 15, we should have the year of Parmenides' birth in 519 or 520 B.C. If, with Grote (*Hist. of Gr.* viii. 145 sq., ed. of 1872), we assign as the date of the dialogue 448 B.C., we should get 513 B.C. If with Hermann (*De Theoria Del.* 7; *De Philos. Ion. Ætatt.* 11), we accept the remark of Synesius (*Calv. Encom.* c. 17) that Socrates was 25 years old, as historical evidence, we should get 510 B.C. But there is nothing to justify our accepting this Platonic exposition as historical evidence. Even Athen. ix. 505 sq. and Macrobius, *Sat.* i. 1, question its chronological accuracy. For if the contents of the conversations said to have been held between Socrates and Parmenides are not historical,—if the gist of the Platonic story, viz., the definite scientific influence of Parmenides upon Socrates, must certainly be an invention, why should not its setting, the meeting of the two men, and the more specific circumstances of this meeting, to which their particular ages at that time belong, be also an invention? This than by Xenophanes, and that it was based upon the concept of Being. Xenophanes, together with the

would not make Plato guilty of a 'deliberate falsehood' (Brandis, i. 376) in the one case more than in the other; otherwise we must also condemn the apparent circumstantiality of the openings of the *Protagoras*, *Theætetus*, *Symposium*, and other dialogues as falsehood. The poetical license is equally great in both instances. Alberti (*Socrates*, p. 16 sq.) is of opinion that Plato did not so entirely renounce the laws of probability as to make his fictions contain historical impossibilities. In reply to this, we need only ask, What, then, are all the numerous and striking anachronisms in Plato's dialogues (cf. Zeller, *Abh. d. Berl. Acad.* 1873; *Hist. Phil. Kl.* 79 sqq.) but historical impossibilities? What can be conceived more improbable than that Socrates and the Eleatic philosophers held all the conversations which Plato puts into their mouths? How do we know that Plato and his disciples were sufficiently acquainted with the precise chronology of Parmenides to make these statements, though they may have been invented, appear impossible to them? Why, lastly, should Plato have hesitated to represent Parmenides as younger than he really was, while he makes Solon, in a similar case, and with the same appearance of historical exactitude (*Tim.* 20 E sqq.), at least twenty years too young? There would be amply sufficient motive for Plato's exposition even if, in fact, Parmenides never met Socrates, or came to Athens (a point we cannot decide). To explain to his disciples the relation of the Eleatic system to his own, it was necessary that Socrates should be confronted with the teachers of the Eleatic doctrine, and, preferably, with the head of the school; and if once this were done, the rest inevitably follows. (Cf. Steinhart, *Plato's Werke*, iii. 24 sqq.; and Zeller, *Abhandlung*, p. 92 sqq.) The historical accuracy of the Platonic exposition was at first defended by Steinhart, *Allg. Enc. v. Ersch. und Grüber*, sect. iii. B, xii. 233 sq., and by myself, *Plat. Stud.* 191. In its favour, vide Schleiermacher, *Plato's W. W.* i. 2, 99; Karsten, *Parm.* 4 sq.; Brandis, *l. c.*; Mullach, *Fragm. Philos. Gr.* i. 109; Schuster, *Heraklit.* 368, &c. Cousin, *Fragm. Philos.* i. 51 sq., would, at any rate, hold to the presence of the two Eleatics in Athens, though he fixes their date in Ol. 79, and gives up their conversation with Socrates. Schaarschmidt does the same, while contesting the genuineness of the Parmenides. Perhaps the statements of Eusebius, *Chron. Ol.* 80, 4, and Syncellus, 254 C, are traceable to Plato: these place Parmenides, together with Empedocles, Zeno, and Heracleitus, in the period mentioned. On the other hand, Eus. *Ol.* 86, Syric. 257 C, make him even 25 years later, contemporary with Democritus, Gorgias, Prodicus, and Hippias. We know nothing more of the life of Parmenides, except that he gave laws to the Eleans (Speusippus ap. Diog. ix. 23; cf. Strabo, *l. c.*), which they swore afresh every year to obey (Plut.

unity of the world-forming force or deity, had also maintained the unity of the world: but he had not therefore denied either the plurality or the variability of particular existences. Parmenides shows that the All in itself can only be conceived as One, because all that exists is in its essence the same. But for this reason he will admit nothing besides this One to be a

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Adv. Col. 32, 3, p. 1126). It does not follow, however, from this that he only applied himself to philosophy in his later life (Steinhart, *A. Enc. l. c.* 234), which is not asserted by any of our authorities. The opinion of Deutinger (*Gesch. d. Philos*, i. a, 358 sqq.), that he was originally a Physicist, and was first led to his doctrine of the One by Anaxagoras, is as contrary to chronological possibility as to the internal relation of the two systems. All antiquity is unanimous in paying homage to the personal and philosophical character of Parmenides. The Eleatic in Plato, *Soph.* 237 A, calls him *Παρμενίδης ὁ μέγας*; Socrates says of him in *Theæt.* 183 E: Π. *δὲ μοι φαίνεται, τὸ τοῦ Ὁμήρου, αἰδοῖός τε ἅμα δεινός τε . . . καί μοι ἐφάνη βάθος τι ἔχειν παντάπασι γενναῖον*; in *Parm.* 127 B, he is described as an old man of noble appearance; and Aristotle, *Metaph.* i. 5, 986 b, 25, gives him decidedly the preference scientifically to Xenophanes and Melissus; not to mention more recent authors. Parmenides expounded his philosophic opinions in a didactic poem, fragments of which have been collected and explained by writers mentioned *sup.* p. 534, 3, and also by Theod. Vatke, *Parm. Vel. Doctrina* (Berl. 1864), and by H. Stein, *Symb. Philol.* Bonnens. 763 sqq. Callimachus, according to Diogenes ix. 32, doubted its genuineness; but that is uncertain and unimportant for us. The title *περὶ φύσεως*, which cannot with certainty be deduced from Theoph. ap. Diog. viii. 55, is ascribed to the work by Sext. *Math.* vii. 111; Simpl. *De Cælo*, 249 b, 23; *Schol. in Arist.* 509 a, 38, and others. Porph. *Antr. Nymph.* c. 22, calls it *φυσικὸν*; Suidas *φυσιολογία*; the Platonic designation *περὶ τῶν ὄντως ὄντων* (Procl. *in Tim.* 5 A, cf. Simpl. *Phys.* 9 a) refers only to the first part; the *κοσμολογία* (Plut. *Amator.* 13, 11, p. 756) to the second. These two parts we shall discuss further on. The statement that Parmenides also wrote in prose (Suidas, *sub voc.*) is no doubt based upon a misunderstanding of what Plato says in *Soph.* 237 A. The supposed prose fragment in Simpl. *Phys.* 76, is certainly spurious. The ancients recognised only one work of this philosopher, vide Diog. *Proœm.* 16; Plato, *Parm.* 128 A, C; Theophr. ap. *Diog.* viii. 55; Clemens, *Strom.* v. 552 C; Simpl. *Phys.* 31 a. Opinions as to the artistic character of the work are to be found in Cic. *Acad.* ii. 23, 74; Plut. *De Aud. po.* c. 2; *De Audiendo*, c. 13 (p. 16, 45); Procl. *in Parm.* iv. 62 Cous. Further details respecting the work and its history are given, ap. Karsten, *l. c.* 15 sqq.

reality. Only Being is: non-Being can as little exist as it can be expressed or conceived; and it is the greatest mistake, the most incomprehensible error, to treat Being and non-Being, in spite of their undeniable difference, as the same.[1] This once recognised, everything else follows by simple inference.[1] Being cannot begin, or cease to exist. It *was* not, it *will* not be, but it *is*, in a full undivided Present.[2] Whence could it have been derived? Out of non-Being? But non-Being does not exist, and cannot produce anything. Out of Being? This could not produce anything except itself. And the same holds good of destruction.[3] Speaking generally, however, what has been or will be is not; but it cannot be said of Being that it is not.[4]

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[1] *Parm.* v. 33:—

εἰ δ' ἄγ' ἐγὼν ἐρέω, κόμισαι δὲ σὺ μῦθον ἀκούσας,
αἵπερ ὁδοὶ μοῦναι διζήσιός εἰσι νοῆσαι.
35. *ἡ μὲν, ὅπως ἔστιν τε καὶ ὡς οὐκ ἔστι μὴ εἶναι,*
πειθοῦς ἐστι κέλευθος, ἀληθείη γὰρ ὀπηδεῖ·
ἡ δ' ὡς οὐκ ἔστιν τε καὶ ὡς χρεών ἐστι μὴ εἶναι,
τὴν δέ τοι φράζω παναπειθέα ἔμμεν ἀταρπόν·
οὔτε γὰρ ἂν γνοίης τό γε μὴ ἐὸν, οὐ γὰρ ἐφικτὸν (al. *ἀνυστὸν*),
40. *οὔτε φράσαις· τὸ γὰρ αὐτὸ νοεῖν ἐστίν τε καὶ εἶναι.*

That does not mean, however, 'Thinking and Being are the same;' the context shows that *ἔστιν* is to be read, and the translation should stand thus: 'For the same thing can be thought and can be,' only that which can be, can be thought. V. 43: *χρὴ τὸ λέγειν τὸ νοεῖν τὸ ὂν ἔμμεναι·* (So Simpl. *Phys.* 19 a; Mullach prefers *λέγειν τε νοεῖν τ' ἐὸν ἔμμ.* Stein's reading is still simpler: *χρὴ τὸ λέγειν τὸ νοεῖν τ' ἐὸν ἔμμεναι.* Grauert, ap. Brandis, i. 379, reads: *χρή σε λέγειν τε νοεῖν τ', ἐὸν ἔμμεναι*, or, *χρή τε λέγειν.* It is impossible to decide with certainty, as we do not know the connection in which these verses originally stood).

ἔστι γὰρ εἶναι
μηδὲν δ' οὐκ εἶναι· τά τέ σε φράζεσθαι ἄνωγα·
45. *πρῶτον τῆσδ' ἀφ' ὁδοῦ διζήσιος εἶργε νόημα,*
αὐτὰρ ἔπειτ' ἀπὸ τῆς, ἣν δὴ βροτοὶ εἰδότες οὐδὲν
πλάζονται δίκρανοι· ἀμηχανίη γὰρ ἐν αὐτῶν
στήθεσιν ἰθύνει πλαγκτὸν νόον. οἳ δὲ φορεῦνται
κωφοὶ ὁμῶς τυφλοί τε τεθηπότες, ἄκριτα φῦλα,
οἷς τὸ πέλειν τε καὶ οὐκ εἶναι ταὐτὸν νενόμισται
κ' οὐ ταὐτὸν, πάντων δὲ παλίντροπός ἐστι κέλευθος.

V. 52:—

οὐ γὰρ μήποτε τοῦτο δαῇς, εἶναι μὴ ἐόντα

(This verse I agree with Mullach in placing here. His enumeration differs from that of Karsten by one. In regard to the reading, *τοῦτο δαῇς εἶναι* seems to me the most probable, according to Bergk's observations, *Zeitschr. für Alterthumsw.* 1854, p. 433. Stein, *l. c.* 485, prefers *δαμῇ*.)

ἀλλὰ σὺ τῆσδ' ἀφ' ὁδοῦ διζήσιος εἶργε νόημα,
μηδέ σ' ἔθος πολύπειρον ὁδὸν κατὰ τήνδε βιάσθω,
55. *νωμᾶν ἄσκοπον ὄμμα καὶ ἠχήεσσαν ἀκουὴν*
καὶ γλῶσσαν· κρῖναι δὲ λόγῳ πολύδηριν ἔλεγχον
ἐξ ἐμέθεν ῥηθέντα. μόνος δ' ἔτι μῦθος ὁδοῖο
λείπεται, ὡς ἔστιν.

The fundamental idea in this demonstration is expressed by Aristotle, *Phys.* i. 3, 187 a, I; cf. 186

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a, 22 sqq. in the proposition, *ὅτι πάντα ἓν, εἰ τὸ ὂν ἓν σημαίνει.* Similarly Theophrastus and Eudemus, p. 474, 1, third edition.

[1] Verse 58:—

ταύτῃ δ' ἐπὶ σήματ' ἔασι
πολλὰ μαλ', ὡς ἀγένητον ἐὸν καὶ ἀνώλεθρόν ἐστιν,
οὖλον, μουνογενές τε καὶ ἀτρεμὲς ἠδ' ἀτέλεστον.

[2] V. 61:—

οὔ ποτ' ἔην οὐδ' ἔσται, ἐπεὶ νῦν ἔστιν ὁμοῦ πᾶν
ἓν ξυνεχές;

ξυνεχὲς denotes, as is clear from V. 78 sqq., the undivided; and in this place, not the undivided *in space*, but *in time*. Being is undivided; therefore no part of its existence can lie in the future or in the past.

[3] V. 62:—

τίνα γὰρ γέννην διζήσεαι αὐτοῦ;
πῆ πόθεν αὐξηθέν; οὔτ' ἐκ μὴ ἐόντος ἐάσω
φάσθαι σ' οὐδὲ νοεῖν· οὐ γὰρ φατὸν οὐδὲ νοητὸν
65. *ἔστιν ὅπως οὐκ ἔστι· τί δ' ἄν μιν καὶ χρέος ὦρσεν*
ὕστερον ἢ πρόσθεν τοῦ μηδενὸς ἀρξάμενον φῦν;
οὕτως ἢ πάμπαν πέλεμεν χρεών ἐστιν ἢ οὐκί.
οὐδέ ποτ' ἐκ τοῦ ἐόντος ἐφήσει πίστιος ἰσχὺς
γίγνεσθαί τι παρ' αὐτό. τοῦ εἵνεκεν (Preller has this instead of *τοὔνεκεν*. *Hist. Phil.* p. 93)
οὔτε γενέσθαι

οὔτ' ὄλλυσθαι ἀνῆκε δίκη. In V. 66, *τοῦ μηδ. ἀρξ.* means 'beginning from nothing.' *φῦν* I take to be a contraction of *φῦναι*, governed by *ὦρσεν*. Vatke, *l. c.* 49, and apparently Preller, *Phil. Gr. Rŏm.* No. 145, make it a participle, which causes difficulty in the construction.

[4] V. 71:—

ἡ δὲ κρίσις περὶ τούτων ἐν τῷδ' ἔστιν·
ἔστιν ἢ οὐκ ἔστιν. κέκριται δ' οὖν, ὥσπερ ἀνάγκη,
τὴν μὲν ἐᾶν ἀνόητον, ἀνώνυμον, οὐ γὰρ ἀληθὴς
ἐστὶν ὁδός, τὴν δ' ὥστε πέλειν καὶ ἐτήτυμον εἶναι.
75. *πῶς δ' ἂν ἔπειτα πέλοι τὸ ἐόν πῶς δ' ἄν κε γένοιτο;*
εἴ γε γένοιτ' οὐκ ἔστ', οὐδ' εἴ ποτε μέλλει ἔσεσθαι.
τὼς γένεσις μὲν ἀπέσβεσται καὶ ἄπιστος ὄλεθρος.

On account of this denial of Becoming, Plato (*Theæt.* 181 A) calls

Being is moreover indivisible; for there is nowhere anything distinct from it by which its parts might be divided: all space is filled by Being alone.[1] It is immovable, in one place, for itself and identical with itself;[2] and since it cannot be incomplete or defective, it must be limited.[3] Nor is Thought separate from Being; for there is nothing outside Being, and all

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the Eleatics *οἱ τοῦ ὅλου στασιῶται*; and Aristotle, according to Sext. *Math.* x. 46, designates them as *στασιώτας τῆς φύσεως καὶ ἀφυσίκους.* Cf. what is cited from Aristotle, p. 587, 3, and from Theophrastus, p. 542, 1.

[1] V. 78:—

οὐδὲ διαιρετόν ἐστιν, ἐπεὶ πᾶν ἐστὶν ὅμοιον,
οὐδέ τι τῇ μᾶλλον τό κεν εἴργοι μιν ξυνέχεσθαι
οὐδέ τι χειρότερον· πᾶν δὲ πλέον ἐστὶν ἐόντος.
τῷ ξυνεχὲς πᾶν ἐστιν, ἐὸν γὰρ ἐόντι πελάζει.

(Cf. Karsten, *l. c.*, as to the reading of V. 79, which is not improved by substituting *πη* for *τῇ*, according to the suggestion of Mullach.) This verse I agree with Ritter, i. 493, is to be connected with V. 90:—

λεῦσσε δ' ὅμως ἀπεόντα νόῳ
παρεόντα βεβαίως· (considered the distant as something present)
οὐ γὰρ ἀποτμήξει τὸ ἐὸν τοῦ ἐόντος ἔχεσθαι,
οὔτε σκιδνάμενον πάντῃ πάντως κατὰ κόσμον
οὔτε συνιστάμενον.

(*ἀποτμήξει* is to be taken intransitively, or else we should, with Karsten, substitute for '*ἀποτμ. τὸ*' *ἀποτμηξεῖται*); cf. V. 104 sqq.

[2] V. 82 ff:—

αὐτὰρ ἀκίνητον μεγάλων ἐν πείρασι δεσμῶν
ἐστὶν, ἄναρχον, ἄπαυστον, ἐπεὶ γένεσις καὶ ὄλεθρος
τῆλε μάλ' ἐπλάγχθησαν, ἄπωσε δὲ πίστις ἀληθής·
τωὐτὸν δ' ἐν τωὐτῷ τε μένον καθ' ἑαυτό τε κεῖται.

How Parmenides proved the immobility of Being, we are not told. The passage in *Theæt.* 180 E, leaves it undecided whether the reason there given belongs to him, or primarily to Melissus. Favorinus, ap. Diog. ix. 29, ascribes one of Zeno's arguments to Parmenides, vide *infra, Zeno.*

[3] V. 86 sqq.:—

οὕτως ἔμπεδον αὖθι μένει· κρατερὴ γὰρ ἀνάγκη
πείρατος ἐν δεσμοῖσιν ἔχει, τό μιν ἀμφὶς ἐέργει.

(According to Simplicius, 9 a, whereas p. 7 a, 31 b, *τε* is substituted for *τὸ*. Other changes are unnecessary. *τὸ* refers as a relative to *πείρατος*):—

οὕνεκεν οὐκ ἀτελεύτητον τὸ ἐὸν θέμις εἶναι·
ἐστὶ γὰρ οὐκ ἐπιδευές, ἐὸν δέ (sc. *ἀτελεύτητον*) *κε παντὸς ἐδεῖτο.*

Further details later on. When Epiph. *Exp. Fid.* 1087 C, says of Parmenides *τὸ ἄπειρον ἔλεγεν ἀρχὴν τῶν πάντων*, he is confusing him with Anaximander.

thought is thought of Being.[1] Being is in a word, therefore, all that really exists as Unity without becoming or passing away, without change of place or of form: a whole, throughout undivided, homogeneous, on all sides equally balanced, and in all points equally perfect. Parmenides therefore compares it to a well-rounded sphere.[2] Consequently the unanimous testimony, therefore, of later writers that according to Parmenides Being exists and nothing besides, and that the All was regarded by him as one eternal immovable essence,[3] is, in fact, correct; but the proposition that the world is eternal and imperishable cannot, strictly speaking, be attributed to this philosopher; for if all plurality or change are denied there can be no question of a world at all. For the same reason it appears that Parmenides did not designate Being as the Deity:[1] we give the name of the Deity[2] to the primitive essence to distinguish this from the world; a philosopher who wholly denies

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[1] V. 94 sqq.:—

τωὐτὸν δ' ἐστὶ νοεῖν τε καὶ οὕνεκέν ἐστι νόημα.
οὐ γὰρ ἄνευ τοῦ ἐόντος ἐν ᾧ πεφατισμένον ἐστὶν
εὑρήσεις τὸ νοεῖν· οὐδὲν γὰρ ἔστιν ἢ ἔσται
ἄλλο πάρεξ τοῦ ἐόντος. Cf. V. 43 (*sup.* p. 584, 1).

[2] V. 97:—

ἐπεὶ τό γε μοῖρ' ἐπέδησεν
οἷον (Simpl. *οὖλον*) *ἀκίνητόν τ' ἔμεναι, ᾧ πάντ' ὄνομ' ἐστὶν,*
ὅσσα βροτοὶ κατέθεντο, πεποιθότες εἶναι ἀληθῆ,
100. *γίγνεσθαί τε καὶ ὄλλυσθαι, εἶναί τε καὶ οὐκί,*
καὶ τόπον ἀλλάσσειν διά τε χρόα φανὸν ἀμείβειν.
αὐτὰρ ἐπὶ (Karsten for *ἐπεὶ*) *πεῖρας πύματον τετελεσμένον ἐστὶ,*
πάντοθεν εὐκύκλου σφαίρης ἐναλίγκιον ὄγκῳ,
μεσσόθεν ἰσοπαλὲς πάντῃ· τὸ γὰρ οὔτε τι μεῖζον
105. *οὔτε τι βαιότερον πελέναι χρεών ἐστι τῇ ἢ τῇ.*
οὔτε γὰρ οὐκ ἐὸν ἔστι τό κεν παύῃ μιν ἱκεῖσθαι
εἰς ὁμὸν, οὔτ' ἐὸν ἔστιν ὅπως εἴη κεν ἐόντος (Mull. for: *κενὸν ἐόντ.*)
τῇ μᾶλλον τῇ δ' ἧσσον, ἐπεὶ πᾶν ἐστιν ἄσυλον.
ᾗ γὰρ παντόθεν ἶσον ὁμῶς ἐν πείρασι κυρεῖ.

[3] Plato, *Parm.* 128 A: *σὺ μὲν γὰρ ἐν τοῖς ποιήμασιν ἓν φῂς εἶναι τὸ πᾶν καὶ τούτων τεκμήρια παρέχει.* *Theaet.* 180. E: *Μέλισσοί τε καὶ Παρμενίδαι . . . διϊσχυρίζονται, ὡς ἕν τε πάντα ἐστί· καὶ ἕστηκεν αὐτὸ ἐν αὑτῷ, οὐκ ἔχον χώραν ἐν ᾗ κινεῖται.* *Soph.* 242 D (*sup.* p. 523, 2); Arist. *Metaph.* i. 5, 986 b, 10 (*ibid.* note 2); *ibid.* l. 28: *παρὰ γὰρ τὸ ὂν τὸ μὴ ὂν οὐθὲν ἀξιῶν εἶναι Παρμ., ἐξ ἀνάγκης ἓν οἴεται, εἶναι τὸ ὂν καὶ ἄλλο οὐθέν.* iii. 4, 1001 a, 31. If Being as such is absolute substance, how are we to conceive the Many? *τὸ γὰρ ἕτερον τοῦ ὄντος οὐκ ἔστιν, ὥστε κατὰ τὸν Παρμενίδου λόγον συμβαίνειν ἀνάγκη ἓν ἅπαντα εἶναι τὰ ὄντα καὶ τοῦτο εἶναι τὸ ὄν.* *Phys.* i. 2, sub init.: *ἀνάγκη δ' ἤτοι μίαν εἶναι τὴν ἀρχὴν ἢ πλείους, καὶ εἰ μίαν, ἤτοι ἀκίνητον, ὥς φησι Παρμενίδης καὶ Μέλισσος,* etc. The criticism of this opinion, however, does not properly belong to Physics, nor yet to the investigation of first principles: *οὐ γὰρ ἔτι ἀρχή*

ἔστιν, εἰ ἓν μόνον καὶ οὕτως ἓν ἔστιν (similarly *Metaph* i. 5). *Ibid.* 185 b, 17; and *Metaph. l. c.* 986 b, 18, on the Limitedness of Being, with Parmenides; cf. Simpl. *Phys.* 25 a, and 29 a: ὡς ὁ Ἀλέξανδρος ἱστορεῖ, ὁ μὲν Θεόφραστος οὕτως ἐκτίθεται (sc. τὸν Παρμενίδου λόγον) ἐν τῷ πρώτῳ τῆς φυσικῆς ἱστορίας· τὸ παρὰ τὸ ὂν οὐκ ὄν, τὸ οὐκ ὂν οὐδέν, ἓν ἄρα τὸ ὄν· Εὔδημος δὲ οὕτως· τὸ παρὰ τὸ ὂν οὐκ ὄν. ἀλλὰ καὶ μοναχῶς λέγεται τὸ ὄν. ἓν ἄρα τὸ ὄν. Simplicius adds that he did not find this in the Physics of Eudemus; but he quotes a passage from that work which censures Parmenides for not having distinguished the different senses in which the concept of Being is employed, and asserts that even had it only one sense, the unity of all Being could not be demonstrated. This is also objected by Aristotle, *Phys.* i. 3, 186 a, 22 sqq., and c, 2. The words ἀλλὰ καὶ μοναχῶς λέγεται τὸ ὂν are in any case only an emendation of Eudemus; of Parmenides he says himself, *l. c.*, and Aristotle says, *Phys. l. c.*, that he did not think of the various senses of Being, from which it naturally follows that he did not expressly discriminate them. It is unnecessary to quote the statements of more recent authors; they are to be found in Brandis, *Comm. El.* 136 sqq., and Karsten, *Parm.* 158, 168. Concerning a proof of the unity of Being, wrongly attributed to Parmenides by Porphyry, we shall speak further on.

[1] Stob. *Ecl.* i. 416; Plut. *Plac.* ii. 4, 3 (*sup.* p. 565, 3). It is more correct to call the *All*, one, eternal, unbecome, unmoved, etc., as we find in Plato. *Theæt.* 181 A (οἱ τοῦ ὅλου στασιῶται); Arist. *Metaph.* i. 3, 984 a. 28 sqq. (ἓν φάσκοντες εἶναι τὸ πᾶν); Theophr. ap. Alex. *in Metaph.* i. 3, 984 b, 1; Alex. *ibid.* Plut. *Plac.* i. 24; Hippol. *Refut.* i. 11; Eus. *Pr. Ev.* xiv. 3, 9; for Parmenides attributes the predicates, ὅλον and πᾶν, to Being also. The expression (Arist. *l. c.*) τὴν φύσιν ὅλην ἀκίνητον εἶναι, is less exact.

[2] In the fragments of Parmenides, this designation is never found, and whether or not more recent writers make use of it, is of little consequence, Stob. *Ecl.* i. 60. Ammon. π. ἑρμην. 58 (cf. Brandis, *Comm.* 141; *Gr. Röm. Phil.* i. 382; Karsten, 208; cf. Parm. v. 61, 75 sq.), Boëth. *Consol.* iii. sub fin. The passage in *De Melisso, Zeno et Gorgia*, c. 4, 978 b, 7 would prove nothing, even were the genuineness of that work more certain than it is.

that the Finite exists side by side with the Eternal does not require such a term.[1] It might more reasonably be asked whether Parmenides really excluded from his concept of Being all that from our point of view seems to involve a plurality, and to transfer sensible determinations to the immaterial essence. This question we must answer in the negative. Even if the comparison of Being with a globe considered in itself, simply as a comparison, proves nothing, all that Parmenides says of the limitedness, homogeneousness, and indivisibility of Being,[2] shows that he conceived it as extended in space, and never formed the idea of a Being uncontained in space. For far from avoiding space-determinations as inadmissible, he expressly describes Being as a fixed and homogeneous mass, symmetrically extended from its centre on all sides—which within its limits always occupies one and the same place, nowhere interrupted by non-Being, and at no point containing more Being than at another. We should be justified in rejecting this description as metaphorical only if we could find any indication that Parmenides conceived Being as incorporeal, and if in other parts of his philosophic discussion he made use of a figurative mode of expression; but neither is anywhere the case. Moreover, as we shall presently see, Zeno and Melissus also attribute to Being magnitude in space, and the Atomists, clearly referring to the doctrine of Parmenides, identify Being with the body, and non-Being with empty space; we can therefore scarcely hesitate to ascribe to this philosopher the opinion which his own words seem intended to convey. His Being is not a metaphysical concept, devoid of all sensuous admixture, but a concept that has been developed from an intuition, and still bears clear traces of this origin. The Real is to Parmenides the Full (πλέον), that which fills space. The distinction of the corporeal and incorporeal is not only unknown to him, but incompatible with his whole point of view; for the unity of Being and Thought, which he maintained as a direct consequence of his doctrine of Unity, is too realistic to be possible, except on the presupposition that the corporeal and the incorporeal had not as yet been discriminated. According to the excellent remark of Aristotle,[1] it is the substance of the corporeal itself, not a substance distinct from the corporeal, with which he is concerned; and when he says 'Only Being is,' this signifies that we attain to the true view of things when we abstract from the separation and variableness of the sensible phenomenon, in order to maintain its simple, undivided and unchangeable substratum as the only Reality. This abstraction is no doubt a bold step; but in making it, Parmenides does not so entirely depart from the whole previous tendency of philosophic enquiries as if he had started with a purely metaphysical concept, without any regard to the data of the senses.

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[1] It is not necessary to assume that Parmenides was hindered by religious feelings or considerations of prudence from declaring himself as to the relation of Being to the Deity (Brandis, *Comm. El.* 178). The answer is more obvious. He did not do so because he was a universal, plastic philosopher, and his philosophy gave no opportunity for the statement of theological definitions.

[2] *Sup.* p. 584 sq. What right Strümpell (*Gesch. d. Theor. Phil. d. Gr.* p. 44) has to deduce from these passages that Being is not extended in space, I do not see.

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[1] Vide *sup.* i. 190, 1, 2, and in regard to the above generally, 187 sq.

So far, then, as the knowledge of the Real is only possible by means of this abstraction, the abstract intellectual study of things can alone lay claim to truth: judgment belongs solely to rational speech (λόγος)—the senses, on the contrary, which reflect the show or appearance of plurality and mutability, of generation and destruction, are the cause of all error. Parmenides earnestly warns us therefore to trust, not the senses, but reason alone;[1] and thus, like Heracleitus, he gives occasion to a discrimination which in the sequel was of the highest importance, both for the theory of knowledge and for metaphysics generally. In his own system, however, it has not this great importance; it is there merely a consequence of the material and metaphysical results, not the foundation of the whole; the cognition of sense, and that of reason, are not opposed in respect of their formal characteristics, but solely in respect of their content; and the psychological investigation of the faculty of knowing is so greatly neglected, as we shall presently see, that the philosopher ascribes to Thought the same origin as to Perception, and derives both from the mixture of material substances.

Although Parmenides so abruptly opposes reality to the phenomenon, intellectual thought to the deceptions of the senses, he cannot forbear pointing out, in the second part of his didactic poem, what theory of the world would result from the standpoint of ordinary opinion, and how individual phenomena would in that case have to be explained.[1]

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[1] *Parm.* v. 33 sqq., 52 sqq. (*supra*, p. 584, 1), to which little is added by later writers (*e.g.* Diog. ix. 22; Sext. *Math.* vii. 111; Plut. *ap.* Eus. *Pr. Ev.* i. 8, 5. Aristocles, *ibid.* xiv. 17, 1; Joh. Dam. *parall.* ii. 25, 23, in Stob. *Floril. ed.* Mein. iv. 234, cf. Arist. *Gen. et corr.* i. 8, 325 b, 13). Many sceptics counted Parmenides as well as his teacher Xenophanes in their ranks (Cic. *Acad.* ii. 23, 74; Plut. *Adv. Col.* 26, 2); but this is not of much importance.

The right view allows us to recognise in all things but One, Being; ordinary opinion adds to this, non-Being.[2] It therefore regards things as compounded of opposite constituents, to only one of which, in truth, Reality belongs;[3] and consequently, to ordinary opinion (vide *supra*), the One appears as a plurality, the invariable as becoming and changeable. If we place ourselves therefore at this point of view, we shall have to admit two elements, of which one corresponds with Being, and the other with non-Being. Parmenides calls the former light or fire, and the latter night; and in the fragments of his writings which we possess he describes the former as the rare, and the latter as the dense and the heavy.[4] They are also named, by other authorities, the warm and the cold, or fire and earth;[5] and it would seem that Parmenides likewise

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[1] We find this same opinion, though it is clumsily expressed, in Plut. ap. Eus. *Pr. Ev.* i. 8, 6: Παρμ. . . . ὁ ἑταῖρος Ξενοφάνους ἅμα μὲν καὶ τῶν τούτου δοξῶν ἀντεποιήσατο, ἅμα δὲ καὶ τὴν ἐναντίαν ἐνεχείρησε στάσιν, as appears from the clearer but imperfect parallel passage ap. Theod. *Cur. Gr. Aff.* iv. 7, p. 57.

[2] V. 33 sqq., 45 sqq. (*supra*, p. 584, 1).

[3] V. 113:—

μορφὰς γὰρ κατέθεντο δύο γνώμης ὀνομάζειν,
(τῶν μίαν οὐ χρεών ἐστιν, ἐν ᾧ πεπλανημένοι εἰσίν)
ἀντία δ' ἐκρίναντο δέμας καὶ σήματ' ἔθεντο
χωρὶς ἀπ' ἀλλήλων.

[4] V. 116:—

τῇ μὲν φλογὸς αἰθέριον πῦρ
ἤπιον ἐόν, μέγ' ἀραιόν, ἑωυτῷ πάντοσε τωὐτόν,
τῷ δ' ἑτέρῳ μὴ τωὐτόν· ἀτὰρ κἀκεῖνο κατ' αὐτὸ
ἀντία νύκτ' ἀδαῆ πυκινὸν δέμας ἐμβριθές τε.

[5] V. 122:—

αὐτὰρ ἐπειδὴ πάντα φάος καὶ νὺξ ὀνόμασται
καὶ τὰ κατὰ σφετέρας δυνάμεις ἐπὶ τοῖσί τε καὶ τοῖς,
πᾶν πλέον ἐστὶν ὁμοῦ φάεος καὶ νυκτὸς ἀφάντου,
ἴσων ἀμφοτέρων, ἐπεὶ οὐδετέρῳ μέτα μηδέν.

Karsten is no doubt right in

made use of these latter names.[1] Aristotle, however, tells us that the more abstract expressions, ‘warm and cold,’[2] which correspond to his own derivation of the elements, were first adopted by him in place of the more concrete

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explaining the latter, according to v. 117 sq. thus: Both are homogeneous and unmixed. The same is asserted in the gloss which Simpl. (*Phys.* 7, b) found in his MS. between the verses: *ἐπὶ τῷδέ ἐστι τὸ ἀραιὸν καὶ τὸ θερμὸν καὶ τὸ φάος καὶ τὸ μαλθακὸν καὶ τὸ κοῦφον, ἐπὶ δὲ τῷ πυκνῷ ὠνόμασται τὸ ψυχρὸν καὶ τὸ ζόφος καὶ τὸ σκληρὸν καὶ τὸ βαρύ. ταῦτα γὰρ ἀπεκρίθη ἑκατέρως ἑκάτερα.*

[1] Arist. *Phys.* i. 5, sub init.: *καὶ γὰρ Π. θερμὸν καὶ ψυχρὸν ἀρχὰς ποιεῖ, ταῦτα δὲ προσαγορεύει πῦρ καὶ γῆν.* *Metaph.* i. 5, 986, b, 31, after the quotation, p. 543, 1: *ἀναγκαζόμενος δ' ἀκολουθεῖν τοῖς φαινομένοις καὶ τὸ ἓν μὲν κατὰ τὸν λόγον πλείω δὲ κατὰ τὴν αἴσθησιν ὑπολαμβάνων εἶναι, δύο τὰς αἰτίας καὶ δύο τὰς ἀρχὰς πάλιν τίθησι, θερμὸν καὶ ψυχοὸν, οἷον πῦρ καὶ γῆν λέγων.* Cf. also, *Metaph.* i. 3, 984 b, 1 sqq., iv. 2, 1004 b, 32. Theophrast ap. Alex. vide *infra*, p. 594, 4. Simpl. *Phys.* 7 b: *τῶν μὲν γεννητῶν ἀρχὰς καὶ αὐτὸς στοιχειώδεις μὲν τὴν πρώτην ἀντίθεσιν ἔθετο, ἣν φῶς καλεῖ καὶ σκότος, πῦρ καὶ γῆν, ἢ πυκνὸν καὶ ἀραιὸν, ἢ ταὐτὸν καὶ ἕτερον* (the last is evidently a misconception of v. 117 sq.). Similarly Simpl. *Phys.* S, 6 b, 38 b; Alex. in *Metaph.* i. 5, 986 b, 17; iv. 2, 1004 b, 29; xii. 1, 1069 a, 26 (33, 21, 217, 34, 643, 19 Bon.). *Ibid.* ap. Philop. *Gen. et Corr.* 64 a; Philop. *Phys.* A, 9, C, 11; Plut. *Adv. Col.* 13, 6, p. 1114; where the two elements are called: *τὸ λαμπρὸν καὶ σκοτεινὸν*, and *De An. Procr.* 27, 2, p. 1026, where they are called *φῶς* and *σκότος*. This is the foundation of the mistake of Clemens, *Cohort.* 42 C: Π. . . . *θεοὺς εἰσηγήσατο πῦρ καὶ γῆν.*

[2] Brandis, *Comment.* 167; Karsten, p. 222, and other writers doubt this, partly on account of the word *οἷον* ap. Arist. *Metaph.* *l. c.* and partly because Simpl. *Phys.* 6 b, says: Π. *ἐν τοῖς πρὸς δόξαν πῦρ καὶ γῆν, μᾶλλον δὲ φῶς καὶ σκότος* (*ἀρχὰς τίθησιν*); cf. Alex. *inf.* p. 594, 1. But the words of Simplicius and Alexander may be also interpreted as we have indicated in the text; and in regard to *οἷον*, Bonitz has shown (Bonitz on the *Metaphysics*, p. 76) that Aristotle not unfrequently uses it when he neither intends to express a comparison nor a doubt. The words *οἷον*, etc., therefore assert only: ‘he calls the one fire, the other earth,’ and are in no way inconsistent with the plain expressions in the Physics and in the treatise on generation and decay. On the other hand, it is quite possible, judging from Aristotle's usual procedure in regard to the opinions of other philosophers, that Parmenides may have first called the dark element earth, in the place where he was speaking of the formation of the earth; inasmuch as he asserted that the earth arose out of darkness. This is borne out by Plutarch, ap. Eus. i. 8, 7: *λέγει δὲ τὴν γῆν τοῦ πυκνοῦ καταῤῥυέντος ἀέρος γεγονέναι.*

designation. He associated light, we are informed by Aristotle,[1] with Being, and Night with non-Being, and this statement is confirmed by the fragments. In these he declares that truth and reality belong only to one of the two elements from which things are commonly derived, and that the existence of the other element, on the contrary, has been falsely assumed.[2] Consequently, he regards the one element as existing, the other as not existing; and for this reason he ascribes to the fiery element the same characteristics as to Being in describing it throughout as homogeneous.[3] He is further said to have regarded the fiery element as the active principle, and darkness as the passive or material principle.[4] This, however, can scarcely be quite correct.

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[1] Arist. *Metaph. l. c.* continues: *τούτων δὲ κατὰ μὲν τὸ ὂν τὸ θερμὸν τάττει, θάτερον δὲ κατὰ τὸ μὴ ὄν. Ibid. Gen. et Corr.* i. 3, 318 b, 6: *ὥσπερ Παρμ. λέγει δύο, τὸ ὂν καὶ τὸ μὴ ὂν εἶναι φάσκων, πῦρ καὶ γῆν.* Alexander in *Metaph.* 986 b, 17, cannot be received as a separate testimony, since it is manifestly taken from Aristotle. So, doubtless, Philop. *Gen. et Corr.* p. 18 a. The statement of Aristotle is contested by Karsten, p. 228, and still more decidedly by Mullach on v. 113 (also by Steinhart, *Allg. Enc.* sect. iii. vol. xii. 233 sq.; *Plato's Werke*, vi. 226), on the ground that neither of the two elements of the perishable can be identified with the existent. There is no sufficient foundation for this, as we have shown above.

[2] V. 114. The word *καταθέσθαι* must be supplied after the words *τῶν μίαν οὐ χρεών ἐστι.* These words however will not bear the interpretation of Simplicius, Krische (*Forsch.* 102), Karsten, Mullach, Steinhart (*Allg. Enc.* 240) and others, which is this: 'to admit only one of which is wrong.' For it is here brought forward as the common error of mankind that two kinds of Reality are assumed by them; as in v. 37, it was said to be the path of deception, to admit non-Being side by side with Being. The words rather mean: of which the one cannot be admitted, because the theory of it is based on deception.

[3] V. 117. Cf. v. 85, 109 (*sup.* p. 592, 3: 586, 2; 587, 2).

[4] Aristotle remarks, *Metaph.* i. 3, 984 b, 1: *τῶν μὲν οὖν ἓν φασκόντων εἶναι τὸ πᾶν οὐθενὶ συνέβη τὴν τοιαύτην [τὴν κινητικὴν] συνιδεῖν αἰτίαν πλὴν εἰ ἄρα Παρμενίδῃ καὶ τούτῳ κατὰ τοσοῦτον ὅσον οὐ μόνον ἓν ἀλλὰ καὶ δύο πως τίθησιν αἰτίας εἶναι. τοῖς δὲ δὴ πλείω ποιοῦσι μᾶλλον ἐνδέχεται λέγειν, οἷον τοῖς*

He may perhaps have attributed a vivifying and formative influence generally to warmth in the origination of organic beings, and in the formation of the universe; but it is self-evident that he can neither have used these Aristotelian expressions, nor intended to explain movement universally, as Heracleitus did, from the warm element as such. For in that case it would have been unnecessary to assume a particular mythical figure, by which all combination of substances is brought about[1]—the goddess who is enthroned in the centre of the universe and rules its whole course.[2] The mixture

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θερμὸν καὶ ψυχρὸν ἢ πῦρ καὶ γῆν· χρῶνται γὰρ ὡς κινητικὴν ἔχοντι τῷ πυρὶ τὴν φύσιν. ὕδατι δὲ καὶ γῇ καὶ τοῖς τοιούτοις τοὐναντίον. Theophrastus, ap. Alex., commenting on this passage, p. 24, 5 Bon. says more definitely: Παρμενίδης . . . ἐπ' ἀμφοτέρας ἦλθε τὰς ὁδούς. καὶ γὰρ ὡς ἀΐδιόν ἐστι τὸ πᾶν ἀποφαίνεται καὶ γένεσιν ἀποδιδόναι πειρᾶται τῶν ὄντων, οὐχ ὁμοίως περὶ ἀμφοτέρων δοξάζων, ἀλλὰ κατ' ἀλήθειαν μὲν ἓν τὸ πᾶν καὶ ἀγέννητον καὶ σφαιροειδὲς ὑπολαμβάνων, κατὰ δόξαν δὲ τῶν πολλῶν εἰς τὸ γένεσιν ἀποδοῦναι τῶν φαινομένων δύο ποιῶν τὰς ἀρχὰς πῦρ καὶ γῆν, τὸ μὲν ὡς ὕλην, τὸ δὲ ὡς αἴτιον καὶ ποιοῦν. This is repeated by the more recent writers, Cic. *Acad.* ii. 37, 118: *P. ignem qui moveat, terram quae ab eo formetur.* Diog. ix. 21: δύο τε εἶναι στοιχεῖα, πῦρ καὶ γῆν, καὶ τὸ μὲν δημιουργοῦ τάξιν ἔχειν, τὴν δὲ ὕλης. Hippol. *Refut.* i. 11. indirectly, no doubt, from Theophrastus, who is also mentioned by Diogenes: Π. ἓν μὲν τὸ πᾶν ὑποτίθεται ἀΐδιόν τε καὶ ἀγέννητον καὶ σφαιροειδές, οὐδὲ αὐτὸς ἐκφεύγων τὴν τῶν πολλῶν δόξαν, πῦρ λέγων καὶ γῆν τὰς τοῦ παντὸς ἀρχάς· τὴν μὲν γῆν ὡς ὕλην, τὸ δὲ πῦρ ὡς αἴτιον καὶ ποιοῦν. Alex. ap. Simpl. *Phys.* 9 a; κατὰ δὲ τὴν τῶν πολλῶν δόξαν καὶ τὰ φαινόμενα φυσιολογῶν . . . ἀρχὰς τῶν γινομένων ὑπέθετο πῦρ καὶ γῆν, τὴν μὲν γῆν ὡς ὕλην ὑποτιθεὶς, τὸ δὲ πῦρ ὡς ποιητικὸν αἴτιον. καὶ ὀνομάζει, φησὶ, τὸ μὲν πῦρ φῶς τὴν δὲ γῆν σκότος. Philop. *Gen. et Corr.* 12 a, o: τὴν μὲν γῆν μὴ ὂν ὠνόμασεν, ὡς ὕλης λόγον ἐπέχουσαν, τὸ δὲ πῦρ ὄν, ὡς ποιοῦν καὶ εἰδικώτερον. Arist. *Gen. et Cor.* ii. 9, 336 a, 8 sqq., does not seem to be alluding specially to Parmenides, but rather to Anaximenes (*sup.* p. 272, 2) and Diogenes (p. 291).

[1] As Simpl. *Phys.* 9 a, remarks against Alexander.

[2] V. 128:—

ἐν δὲ μέσῳ τούτων (on this point, cf. p. 600, 3) Δαίμων ἣ πάντα κυβερνᾷ·
πάντῃ γὰρ στυγεροῖο τόκου καὶ μίξιος ἀρχή,
πέμπουσ' ἄρρενι θῆλυ μιγῆναι, ἐναντία δ' αὖθις
ἄρσεν θηλυτέρῳ.

of the light and the dark he represents in a symbolic manner as a sexual union; describing Eros as the first creation of the world-ruling goddess,[1] and these elements themselves as the masculine and feminine.[2] He seems to have introduced other symbolic beings as gods,[3] besides Eros; but we are not told what part they played in the formation of the world.

That Parmenides borrowed his doctrine of the two elements from an older physical theory is not probable; for in the first place we know of no theory which would have adapted itself to this purpose;[4] and, secondly, he himself says that the ordinary opinion of mankind generally, is the object of his exposition in the second part of the poem. Accordingly, this exposition is founded on a fact which could not well escape observation, viz., that the sense perception and common opinion see in

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According to Stob. *Ecl.* i. 482 sq., parall. cf. p. 158; Theod. *Cur. Gr. Aff.* vi. 13, sect. 87, this goddess of Parmenides was called *κυβερνῆτις*, *κληροῦχος* (for which Karsten, p. 241, would substitute *κληδοῦχος*), *δίκη*, and *ἀνάγκη*; but other things, especially the introduction to the poem, would seem to be brought in here. Cf. Krische, *Forsch.* p. 107.

[1] V. 132 (Plato, *Symp.* 178 B; Arist. *Metaph.* i. 4, 984 b, 25; *πρώτιστον μὲν ἔρωτα θεῶν μητίσατο πάντων*). The subject of *μητίσατο* is, according to the express statement of Simplicius, *l. c.*, the *δαίμων*, v. 128; Plut. *Amator.* 13, 11, p. 756, says instead 'Αφροδίτη, but this is sufficiently explained by the description of the goddess, and especially by the circumstance that she is the parent of Eros.

[2] This more general interpretation of v. 130 sq. seems to be required by the connection of this verse, and the universal cosmical significance which manifestly belongs to Eros.

[3] The evidence of Cicero, or rather that of Philodemus (Cic. *N. D.* i. 11, 28), *quippe qui bellum, qui discordiam, qui cupiditatem ceteraque generis ejusdem ad Deum revocat*, would not of itself be conclusive; it is a question whether Parmenides is not here confused with Empedocles; but the words *πρώτιστον θεῶν πάντων* in *Parm.* v. 132 show that other gods followed Eros. Vide Krische, *l. c.* 111 sq.

[4] The texts in Aristotle which were supposed to refer to such theories, otherwise unknown to us (*supra*, p. 594, 1), may be explained in another way. Further details, p. 599, 3rd ed.

all things opposite substances and forces united. The explanation of this fact—the reduction of these opposites to the fundamental opposite of Being and non-Being, of light and dark, and the introduction of the creating divinities—all this is to be regarded as his own addition. Yet, in the ancient cosmogonies,[1] in the early Ionian theories of the creation, and in the Pythagorean doctrine of the primitive opposites,[2] there are points of similarity which may have had some influence on his exposition.

In the further development of physical notions, Parmenides extended his investigation to everything which occupied the enquiry of that period.[3] This portion of his doctrine, however, has been transmitted to us in a very imperfect state. In his description of the universe, he allies himself with the Pythagorean system, though he does not invariably follow it. He conceives the universe as compounded of several globes or circles[1] placed around each other. The innermost and outermost of these consist of the dense and dark element, and form the fixed kernel and external wall of the universe. Around the innermost circles, and beneath the outermost circle, lie circles of pure fire; in the intermediate region between them, are circles composed of the dark and the fiery element mixed.[2] By the outermost of these circles we must understand the vault of heaven conceived as fixed;[1] by the circle of fire under this, the circumambient fire of the Pythagoreans; the fixed circle in the centre can only be the earth, which we are elsewhere told Parmenides considered to be a globe at rest in the midst of the universe.[2] According to this, the circle of fire surrounding it must be the air which, as contrasted with the earth, might well be described as the rare and the luminous.[3] Between these two extreme points is the heaven of fixed stars.[4] How the particular spheres were placed in these, and whether Parmenides departed from the opinion usually held as to their succession, cannot be determined

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[1] Such as the statements in Hesiod, Acusilaos, and Ibycus on Eros; the utterances of Acusilaos on Eros and Night, and the like. Vide *supra*, pp. 87, 97.

[2] Among which, as is well known, we find that of light and darkness.

[3] He himself promises in v. 120 sq.:—

τῶν σοι ἐγὼ διάκοσμον ἐοικότα πάντα φατίσω,
ὡς οὐ μήποτέ τίς σε βροτῶν γνώμη παρελάσσῃ.

133 sq.:—

εἴσῃ δ' αἰθερίην τε φύσιν τά τ' ἐν αἰθέρι πάντα
σήματα καὶ καθαρᾶς εὐαγέος ἠελίοιο
λαμπάδος ἔργ' ἀΐδηλα καὶ ὁππόθεν ἐξεγένοντο,
ἔργα τε κύκλωπος πεύσῃ περίφοιτα σελήνης
καὶ φύσιν· εἰδήσεις δὲ καὶ οὐρανὸν ἀμφὶς ἔχοντα
ἔνθεν ἔφυ καὶ ὥς μιν ἄγουσ' ἐπέδησεν ἀνάγκη
πείρατ' ἔχειν ἄστρων.

140:—

πῶς γαῖα καὶ ἥλιος ἠδὲ σελήνη
αἰθήρ τε ξυνὸς γάλα τ' οὐράνιον καὶ ὄλυμπος
ἔσχατος ἠδ' ἄστρων θερμὸν μένος ὡρμήθησαν
γίγνεσθαι.

Plut. *Adv. Col.* 13, 6, says of him: ὅς γε καὶ διάκοσμον πεποίηται, καὶ στοιχεῖα μιγνὺς, τὸ λαμπρὸν καὶ σκοτεινὸν, ἐκ τούτων τὰ φαινόμενα πάντα καὶ διὰ τούτων ἀποτελεῖ. καὶ γὰρ περὶ γῆς εἴρηκε πολλὰ καὶ περὶ οὐρανοῦ καὶ ἡλίου καὶ σελήνης καὶ ἄστρων, καὶ γένεσιν ἀνθρώπων ἀφήγηται καὶ οὐδὲν ἄῤῥητον . . . τῶν κυρίων παρῆκεν. In v. 141, the Pythagorean distinction of οὐρανὸς and ὄλυμπος is seen, as has been already observed, p. 471, 2. In Stobæus (vide following note), that part of the sky which lies nearest to the earth is called οὐρανὸς, whereas in v. 137, οὐρανὸς is the extreme limit of the universe. Stein, p. 798 sq., unnecessarily refers v. 133–139 to Empedocles.

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[1] It is not clear from the authorities (vide following note), which of the two is intended. The expression *στεφάνη* which Parmenides uses would point to the idea of circular bands. But as the outermost of these circles, the concave vault of heaven, in accordance, not only with our perceptions, but with Parmenides' doctrine of Being (*supra*, p. 587, 589), must be conceived as spherical (for which reason it is called in v. 137, *οὐρανὸς ἀμφὶς ἔχων*), and as the earth (according to 598, 2) must also be a sphere, it is difficult to say what the intermediate layers can be except hollow globes. (Cf., however, the observations on p. 445, 1.)

[2] Stob. *Ecl.* i. 482 (the commencement is also ap. Plut. *Plac.* ii. 7, 1; Galen, c. 11, p. 267): Π. *στεφάνας εἶναι περιπεπλεγμένας ἐπαλλήλους, τὴν μὲν ἐκ τοῦ ἀραιοῦ τὴν δὲ ἐκ τοῦ πυκνοῦ· μικτὰς δὲ ἄλλας ἐκ φωτὸς καὶ σκότους μεταξὺ τούτων· καὶ τὸ περιέχον δὲ πάσας τείχους δίκην στερεὸν ὑπάρχειν, ὑφ' ᾧ πυρώδης στεφάνη, καὶ τὸ μεσαίτατον πασῶν* [sc. *στερεὸν ὑπάρχειν*], *περὶ ὃν* (l. *ὃ*) *πάλιν πυρώδης. τῶν δὲ συμμιγῶν τὴν μεσαιτάτην ἁπάσαις τοκέα* (Davis commenting on Cic. *N. D.* i. 11, substitutes this for *τε καὶ*; Krische proposes *αἰτίαν*, in accordance with *Parm.* v. 129—vide *sup.* p. 595, 2—we might conjecture instead of *ἁπάσαις τε καὶ*: *ἀρχὴν τόκου τε καὶ*) *πάσης κινήσεως καὶ γενέσεως ὑπάρχειν, ἥντινα καὶ δαίμονα καὶ κυβερνῆτιν καὶ κληροῦχον ἐπονομάζει, δίκην τε καὶ ἀνάγκην.* (Cf. 595, 2.) *καὶ τῆς μὲν γῆς τὴν ἀπόκρισιν εἶναι τὸν ἀέρα, διὰ τὴν βιαιοτέραν αὐτῆς ἐξατμισθέντα πίλησιν, τοῦ δὲ πυρὸς ἀναπνοὴν τὸν ἥλιον καὶ τὸν γαλαξίαν κύκλον· συμμιγῆ δ' ἐξ ἀμφοῖν εἶναι τὴν σελήνην τοῦ τ' ἀέρος καὶ τοῦ πυρός. περιστάντος δὲ ἀνωτάτω πάντων τοῦ αἰθέρος ὑπ' αὐτῷ τὸ πυρῶδες ὑποταγῆναι, τοῦθ' ὅπερ κεκλήκαμεν οὐρανὸν, ὑφ' οὗ ἤδη τὰ περίγεια.* This account (in the interpretation of which Krische, *Forsch.* 101 sqq., seems to me to have best succeeded, and to have essentially improved on that of Brandis,

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Comment. 160 sqq., and Karsten, 241 sqq.) is partially confirmed by the confused statement of Cicero, *N. D.* i. 11, 28, *nam Parmenides quidem commenticium quiddam coronae similitudine efficit: Stephanen adpellat, continente ardore lucis orbem, qui cingit, coelum, quem adpellat Deum* (this is either wholly false, or an entire misapprehension of some genuine passage) but especially by v. 126 of Parmenides:—

αἱ γὰρ στεινότεραι [sc. *στεφάναι*]
    πεποίηντο πυρὸς ἀκρίτοιο,
αἱ δ' ἐπὶ ταῖς νυκτός, μετὰ δὲ φλογὸς
    ἵεται αἶσα.
ἐν δὲ μέσῳ, &c.

(*Supra*, p. 595, 2). Cf. v. 113 sqq., *supra* 592, 3.

[1] *ἔσχατος Ὄλυμπος*, as it is called in v. 141.

[2] Diog. ix. 21: *πρῶτος δ' οὗτος τὴν γῆν ἀπέφηνε σφαιροειδῆ καὶ ἐν μέσῳ κεῖσθαι.* Plut. *Plac.* iii. 15, 7. Parmenides and Democritus maintain that the earth is kept in an equilibrium, and does not move, because it is equidistant from all parts of the universe. When Schäfer (*Astron. Geogr. d. Griechen*, Flensb. 1873, p. 12 sq.) says, following the precedent of Schaubach and Forbiger, that Parmenides ascribed to the earth the form of a disc, and not of a sphere, he forgets that the statement of Diogenes originates with Theophrastus. Theophrastus, according to Diog. viii. 48, asserted of Parmenides: *πρῶτον ὀνομάσαι τὴν γῆν στρογγύλην*; *στρογγύλην* must here mean, as it does with Plato, *Phædo*, 97 D (*πότερον ἡ γῆ πλατεῖά ἐστιν ἢ στρογγυλη*), the spherical form, as Parmenides was by no means the first philosopher who thought the earth was a round disc.

[3] This especially, and not heat, appears also in v. 116 sq. (vide *sup.* p. 592, 4), as the distinguishing characteristic of the fire of Parmenides; he even calls it *ἤπιον*.

[4] Called ap. Stobæus, *l. c.*, *πυρῶδες* and *οὐρανός*.

with certainty.[1] This is also the case with other astronomical and cosmological theories attributed to him.[2] In the midst of the universe[3] the goddess that rules it

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[1] Stob. i. 518, says: Π. *πρῶτον μὲν τάττει τὸν Ἑῷον, τὸν αὐτὸν δὲ νομιζόμενον ὑπ' αὐτοῦ καὶ Ἕσπερον, ἐν τῷ αἰθέρι· μεθ' ὃν τὸν ἥλιον, ὑφ' ᾧ τοὺς ἐν τῷ πυρώδει ἀστέρας, ὅπερ οὐρανὸν καλεῖ* (cf. p. 570). If this representation is correct, we might suppose that Parmenides had placed the milky way highest, after the steadfast arc of heaven, and the other fixed stars lowest; the planets, sun and moon, between the two. It is questionable, however, whether the informant of Stobæus derived his statements from accurate knowledge of Parmenides' poem, or constructed for himself, from the verses quoted p. 598, 2, and from other passages, an astronomical system, far transcending Parmenides' own doctrine. Cf. Krische, p. 115.

[2] According to Stob. i. 484 (*sup.* p. 598, 2), 524, he ascribed to the milky way and to the sun a fiery nature, and to the moon a mixed nature; but as all three belong to the mixed spheres, there could only be question of more or less of the fiery or of the dark element. In p. 574 (*Plac.* iii. 1, 6; Galen. c. 17, p. 285), Stobæus says that the colour of the milky way arises from the mixture of the dense and the rare, and he makes Parmenides (s. 564) account for the face in the moon from this cause. According to p. 532, Parmenides thought the sun and moon were produced from the milky way—the sun from the rarer, the moon from the denser part of its admixture. In p. 550 (*Plac.* ii. 26, parall.) we find: Π. *πυρίνην* [*τὴν σελήνην*] *ἴσην δὲ τῷ ἡλίῳ, καὶ γὰρ ἀπ' αὐτοῦ φωτίζεσθαι* (this also ap. *Parm.* v. 144 sq.), where, however, we must either omit *γὰρ*, which is wanting in the other texts, or we must suppose that *ἴσην* with Parmenides did not refer to the magnitude, but to the orbit of the moon. (*Karsten*, p. 284.) The opinion of Parmenides on the nature of the stars is thus expressed by Stob. i. 510: he regarded them (like Heracleitus, Xenophanes, Anaximander and others) as *πιλήματα πυρὸς*, that is, fiery masses of vapour, which are nourished by the evaporation from the earth (if this is truly reported of him). The identity of the morning and evening star, on which he certainly must have given some opinion, was, according to some authors, discovered by him (Diog. ix. 23; cf. viii. 14; Suidas, Ἕσπερος); others ascribe this discovery to Pythagoras (vide *sup.* p. 458, 1). Also the division of the earth into five zones, the author of which is sometimes said to be Parmenides (Posidon. ap. Strabo, ii. 2, 2, p. 94; Ach. Tat. *ad. Arat.* c. 31, p. 157 C; Plut. *Plac.* iii. 11, 4), is by others attributed to the Pythagoreans (*sup.* p. 480, 2), who might indeed have arrived at it through Parmenides.

[3] Stob. (*sup.* p. 598, 2) says, in the centre of the mixed spheres. This statement is rightly explained by Krische, *Forsch.* 105 sq., as a misunderstanding of *τούτων* in v. 128, quoted *sup.* p. 595, 2. Also Simpl. *Phys.* 8 a, says of Parmenides: *ποιητικὸν αἴτιον . . . ἓν κοινὸν, τὴν ἐν μέσῳ πάντων ἱδρυμένην καὶ*

—the parent of the gods and of all things (vide *supra*) —has her dwelling place. She undoubtedly corresponds to the central fire of the Pythagoreans, the mother of the gods and former of the world.

Besides these cosmological notions, we have some anthropological theories handed down to us as those of Parmenides. He seems to have conceived the beginning of the human race as a development from primitive slime, brought about by the heat of the sun;[1] and his opinion on this subject has therefore been identified with that of Empedocles.[2] What he says on the difference of the sexes[3] and the origin of this difference in generation is unimportant.[4] It is of more consequence

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πάσης γενέσεως αἰτίαν δαίμονα τίθησιν, and similarly Iambl. *Theol. Arithm.* p. 8, after a mention of the central fire: *ἐοίκασι δὲ κατά γε ταῦτα κατηκολυθηκέναι τοῖς Πυθαγορείοις οἵ τε περὶ Ἐμπεδοκλέα καὶ Παρμενίδην . . . φάμενοι τὴν μοναδικὴν φύσιν Ἑστίας τρόπον ἐν μέσῳ ἱδρύσθαι.* The opposite view of Apelt. *Parm. et Emp. doctrina de mundi structura* (Jena, 1857), p. 5 sqq., I cannot agree with.

[1] Diog. ix. 22 says, probably after Theophrastus: *γένεσιν ἀνθρώπων ἐξ ἡλίου πρῶτον γενέσθαι*; but instead of *ἡλίου* we should probably read *ἰλύος*, with the Basle edition and many modern writers; or, according to Steinhart's conjecture (*Allg. Enc. l. c.* 242), *ἡλίου τε καὶ ἰλύος*. But even if we accept *ἡλίου*, we need not adopt with Krische, *Forsch.* 105, the idea of the production of souls out of the sun—a conception which can hardly lie in the words, and which neither the supposed precedent of the Pythagoreans (*sup.* p. 476, 2), nor the utterance, ap. Simpl. *Phys.*, 9 a, mentioned p. 448, 2, 3rd ed., can justify us in attributing to Parmenides. We must rather understand with Karsten, p. 257, a production by means of the sun's heat. Plutarch (vide *sup.* p. 597, 3) also says that Parmenides spoke of the origin of men.

[2] Cens. *Di. Nat.* 4, 8, after having quoted the famous opinion of Empedocles: *haec eadem opinio etiam in Parmenide Veliensi fuit, pauculis exceptis ab Empedocle dissensis* (*dissentientibus?* cf. on this subject pp. 256, 296, 569).

[3] Although he regarded the fiery element as the nobler, he yet held that women were of warmer nature than men: hence their more sanguine temperament, etc. (Arist. *Part. Anim.* ii. 2, 648 a, 28; cf. *Gener. Anim.* iv. 1, 765 b, 19). For this reason, at the first forming of mankind, he represents men as originating in the north, and women in the south, Plut. *Plac.* v. 7, 2; Galen, c. 32, p. 324.

[4] According to v. 150, boys

to us to learn that he derived the phenomena of the life of the soul, perception and reflection, from the mixture of substances in the body. He supposed that each of the two primitive substances is sensible of that which is akin to it, and that therefore the notions and thoughts of men are of this or that nature, recollections remain or are lost, according as the warm or cold element predominates in the body: he sought the cause of life and of intelligence in the warm element;[1] but even where this is entirely absent, as in the corpse, there must still be sensation; only that sensation is then to be referred, not to light and heat, but to the cold, dark element.[2] We see from this that even Par-

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proceed from the right side, and girls from their left of the organs in both sexes; the statement, ap. Plut. *Plac.* v. 11, 2, and Cens. *Di. Nat.* 6, 8, that children derived from the right side resemble their father, and those from the left their mother, is a mere misunderstanding. What Censorinus says, c. 6, 5; cf. 5, 4, is more likely to be true, viz., that the seed of both parents struggles for the mastery, and the child resembles whichever part is victorious. The verses (a Latin version, ap. Coel. Aurelian, *De Morb. Chron.* iv. 9, p. 545, v. 150 sqq. Karst.) are also to be considered genuine, which attribute a right constitution of body to the harmonious blending of male and female seed, and malformations and blemishes to their strife. The statement in the *Plac.* v. 7, 4, on the origin of the difference of the sexes, is certainly incorrect.

[1] Stob. *Ecl.* i. 796, therefore says, adopting later terminology, Παρμενίδης πυρώδη (τὴν ψυχήν). He also explained sleep and age as resulting from the decline of warmth. *Tert. De An.* c. 43; Stob. *Floril.* 115, 29.

[2] *Parm.* v. 146 sqq.:—

ὡς γὰρ ἑκάστῳ ἔχει κρᾶσις μελέων πολυκάμπτων,
τὼς νόος ἀνθρώποισι παρέστηκεν· τὸ γὰρ αὐτὸ
ἐστὶν ὅπερ φρονέει μελέων φύσις ἀνθρώποισι
καὶ πᾶσιν καὶ παντί· τὸ γὰρ πλέον ἐστὶ νόημα.

The best elucidation of this fragment is given by Theophrastus, *De Sensu*, 3 sq.: Παρμ. μὲν γὰρ ὅλως οὐδὲν ἀφώρικεν (he did not treat of each of the senses separately) ἀλλὰ μόνον, ὅτι δυοῖν ὄντοιν στοιχείοιν κατὰ τὸ ὑπερβάλλον ἐστὶν ἡ γνῶσις· ἐὰν γὰρ ὑπεραίρῃ τὸ θερμὸν ἢ τὸ ψυχρὸν, ἄλλην γίνεσθαι τὴν διάνοιαν· βελτίω δὲ καὶ καθαρωτέραν τὴν διὰ τὸ θερμόν· οὐ μὴν ἀλλὰ καὶ ταύτην δεῖσθαί τινος συμμετρίας· ὡς γὰρ ἑκάστῳ, φησίν etc. τὸ γὰρ αἰσθάνεσθαι καὶ τὸ φρονεῖν ὡς ταὐτὸ λέγει menides is still far from discriminating between the spiritual and the corporeal, and that he does not attempt to distinguish perception and thought in regard to their origin and formal character, though he entirely recognises the superiority of the rational assertion to the sensuous intuition; for that such a view is only enunciated in the second part of his poem is unimportant for this point. If he had been aware of the distinction, he would not have passed it over in this place, but would have sought to explain it from the standpoint of ordinary opinion.[1] But he has instituted no further enquiries into the nature of opinion, and of the activity of the soul.[2]

διὸ καὶ τὴν μνήμην καὶ τὴν λήθην ἀπὸ τούτων γίνεσθαι διὰ τῆς κράσεως. ἂν δ' ἰσάζωσι τῇ μίξει πότερον ἔσται φρονεῖν ἢ οὔ, καὶ τίς ἡ διάθεσις, οὐδὲν ἔτι διώρικεν· ὅτι δὲ καὶ τῷ ἐναντίῳ καθ' αὑτὸ ποιεῖ τὴν αἴσθησιν, φανερὸν ἐν οἷς φησι τὸν νεκρὸν φωτὸς μὲν καὶ θερμοῦ καὶ φωνῆς οὐκ αἰσθάνεσθαι διὰ τὴν ἔκλειψιν τοῦ πυρὸς, ψυχροῦ δὲ καὶ σιωπῆς καὶ τῶν ἐναντίων αἰσθάνεσθαι· καὶ ὅλως δὲ πᾶν τὸ ὂν ἔχειν τινὰ γνῶσιν. Cf. Alex. *in Metaph.* 1009 b, 21, who concludes his commentary on the verse with the words (p. 263, 22 Bon.): τὸ γὰρ πλέον λέγεται νόημα· ὡς γὰρ (?) τοῦ φρονεῖν ἠρτημένου τῆς σωματικῆς κράσεως καὶ ἀεὶ κατὰ τὸ πλεονάζον καὶ ἐπικρατοῦν ἐν τῇ σωματικῇ διαθέσει αὐτοῦ γενομένου. Ritter, i. 495, translates πλέον as the full; Hegel, *Gesch. d. Phil.* i. 277, the most; Brandis, *Gr. Röm. Phil.* i. 392, the mightier; Steinhart, *l. c.* 243, the preponderant fiery. It rather signifies, however, as Theophrastus rightly explains, τὸ ὑπερβάλλον, the preponderating, and the whole proposition asserts that of the two elements, the one that preponderates and overcomes is thought, which engenders and determines opinions. On account of this theory, Theophrastus reckons Parmenides among those philosophers who regard perception as produced by that which is of like kind.

[1] Theophrastus says: τὸ αἰσθάνεσθαι καὶ τὸ φρονεῖν ὡς ταὐτὸ λέγει; Arist. *Metaph.* iv. 5, 1009 b, 12, 21, reckons Parmenides among those who considered φρόνησις to be the same as αἴσθησις; and Diog. ix. 22, following Theophrastus, and agreeing with Stob. i. 790, tells us τὴν ψυχὴν καὶ τὸν νοῦν ταὐτὸν εἶναι (Π. ἀπέφηνε). This is, as a matter of fact, quite correct; but we must remember that he did not observe the distinction between perception and thought, and consequently did not expressly deny it; and that in v. 148, perception is included under the word φρονέει.

[2] Cf. p. 602, 2. According to

Whether in his physics he inculcated the doctrine of metempsychosis or of pre-existence is uncertain.[1] The statement that he believed in a destruction of the universe[2] seems to be founded on a misunderstanding.[3]

What significance Parmenides ascribed to his phy-

Joh. Damasc. *Parall.* ii. 25, 28 (Stob. *Floril. Ed.* Mein. iv. 235), Parmenides, like Empedocles, accounted for sensation by the theory of pores in the organs of sense. The name of Parmenides, however, is no doubt wrongly placed in this connection; it is absent ap. Plut. *Plac.* iv. 9, 3, and Galen, c. 14, p. 303. Ib. No. 30, we find Παρμ. 'Εμπεδοκλῆς ἐλλείψει τροφῆς τὴν ὄρεξιν, a notice on which, even if it is true, nothing could be based: for Karsten's explanation (p. 269) that desire arises when one of the elements is present in too small measure, is very uncertain. Lastly, Plut. *Plac.* iv. 5, 5, says: Π. ἐν ὅλῳ τῷ θώρακι (τὸ ἡγεμονικὸν) καὶ 'Επίκουρος, but this is evidently a mere inference from some saying of Parmenides, and not the saying itself.

[1] Simpl. *Phys.* 9 a, says of Parmenides' Deity: καὶ τὰς ψυχὰς πέμπειν ποτὲ μὲν ἐκ τοῦ ἐμφανοῦς εἰς τὸ ἀειδὲς, ποτὲ δὲ ἀνάπαλίν φησι. Ritter, i. 510, and Karsten, p. 272 sqq., understand this to mean that ἐμφανὲς was the light or æther, and ἀειδὲς the dark or the terrestrial world; and that, accordingly, Parmenides regarded birth as a sinking from the higher world, and death as a return to it. But the expressions ἐμφανὲς and ἀειδὲς do not signify the light and the dark, but that which is manifest to us, and that which is hidden; the one consequently the upper world, and the other the lower, Hades. The words of Simplicius, therefore, assert that God sends souls now out of this life, and now into it. And though these words, strictly speaking, certainly imply pre-existence, it is still doubtful whether we ought so to interpret them, and not as a poetical mode of expression. At the same time, it is quite possible that Parmenides may have adopted in his exposition of the ordinary theories the doctrine of transmigration. Also the expression στυγερὸς τόκος (*Parm.* v. 129, *sup.* p. 595, 2) does not necessarily, as Ritter thinks, express that it would be better for men not to be born: it may simply refer to birth pangs. πάντη already carries us beyond our human world.

[2] Hippol. *Refut.* i. 11: τὸν κόσμον ἔφη φθείρεσθαι, ᾧ δὲ τρόπῳ, οὐκ εἶπεν.

[3] As the Philosophumena themselves say that Parmenides did not give his opinion particularly on the destruction of the world, it is probable that the statement has no other foundation than the closing verse of Parmenides' poem:—

οὕτω τοι κατὰ δόξαν ἔφυ τάδε νῦν
    τε ἔασι,
καὶ μετέπειτ' ἀπὸ τοῦδε τελευτήσουσι
    τραφέντα·
τοῖς δ' ὄνομ' ἄνθρωποι κατέθεντ'
    ἐπίσημον ἑκάστῳ.

These verses, however, seem to refer to the destruction of individuals and not of the universe.

sics is a point on which opinions have been divided from the earliest times.[1] Some suppose that in them we have throughout only the standpoint of delusive opinion, and not the personal convictions of the philosopher. Others think that he did not intend to deny all truth to the world of phenomena as such, but only to discriminate its divided and variable Being from the One and undivided Being of true existence. This second theory has had many advocates in modern times,[2] but I cannot support it. Parmenides himself declares too explicitly that he acknowledges only the one unchangeable essence as a reality; that he does not concede a particle of truth to the ordinary notion which shows us plurality and change; and that, consequently, in the second part of his poem he is stating the opinions of others, and not his own convictions.[3] Aristotle apprehended his doctrine

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[1] The opinions of the ancients are given most fully by Brandis, *Comm. El.* 149 sqq.; cf. *Gr. Röm. Phil.* i. 394 sqq.; and also by Karsten, p. 143 sqq. I have not thought it necessary to discuss them, as the judgment of Aristotle, which we shall presently examine, must, after all, be conclusive for us.

[2] Schleiermacher, *Gesch. d. Phil.* 68. 'But the truth is that all this holds good only of absolute Being; and, therefore, the Plurality is not a plurality of absolute Being,' etc.; Karsten, 145: *ille nec unam amplexus est veritatem, nec sprevit omnino opiniones; neutrum exclusit, utrique suum tribuit locum.* Parmenides (cf. p. 149) distinguished the eternal from the mutable, without exactly defining the relation of the two spheres, but it never occurred to him to regard the Phenomenon as deceptive appearance. Cf. Ritter, i. 499 sqq. According to the Eleatics we can never grasp divine truth except in a few general propositions; when, according to man's usual method of thinking, we assume plurality and change, this is only falsehood and deception of the senses. On the other hand, we must acknowledge that even in what appears as Many and Change the Divine exists, although veiled and misapprehended.

[3] Cf. on this point the quotations *sup.* pp. 584, 1; 587, 2; 604, 8; especially the verses with which the first part of his poem, the doctrine of Being, concludes, v. 110 sqq.:—

ἐν τῷ σοι παύω πιστὸν λόγον ἠδὲ
νόημα

in this same way;[1] Plato tells us[2] that in contradicting the ordinary view, Zeno was entirely at one with his master; and it is entirely beyond question that Zeno absolutely denied plurality and change. It may seem strange, on this view of the matter, that Parmenides should not only give a detailed account of opinions which he considers altogether worthless, but should construct a specific theory from their point of view; it may also seem unlikely that he should entirely deny the truth of the sense perception, and that in his few propositions concerning the One, which are rather negative than positive, he should believe himself to have exhausted the whole of the truth.[3] But what else could be said, and how could he express himself differently on the subject of reality, having once started from the proposition that only Being is, and that non-Being is absolutely, and in all respects, non-existent, when he had not attained to those more precise dialectical distinctions with which Plato and Aristotle afterwards opposed his doctrine? His reason for nevertheless entering at length upon the consideration of the world of phenomena is sufficiently explained by himself:

ἀμφὶς ἀληθείης· δόξας δ' ἀπὸ τοῦδε βροτείας
μάνθανε, κόσμον ἐμῶν ἐπέων ἀπατηλὸν ἀκούων.

[1] Cf. the passages quoted, *sup.* p. 561, 3; 587, 8; and *De Cœlo*, iii. i. 298 b, 14: *οἱ μὲν γὰρ αὐτῶν ὅλως ἀνεῖλον γένεσιν καὶ φθοράν· οὐθὲν γὰρ οὔτε γίγνεσθαί φασιν οὔτε φθείρεσθαι τῶν ὄντων. ἀλλὰ μόνον δοκεῖν ἡμῖν. οἷον οἱ περὶ Μέλισσόν τε καὶ Παρμενίδην.* Similarly, *Gen. et Corr.* i. 8, 325 a, 2. He then proceeds to mention the determinations of the world of phenomena, and praises Parmenides for having extended his observations to that world also (*Metaph.* i. 5, *sup.* p. 592, 1), but this is not to the purpose, for nothing is said by him of the relation in which Parmenides placed the Phenomenon and Reality.

[2] Parm. 128 A.

[3] Ritter, *l. c.*

he purposes not to overlook even hostile opinions.[1] The reader is to have both theories set before him, the true and the false, in order that he may the more surely decide for the true. The false theory of the universe is not indeed not represented as it is actually found with any of the previous philosophers, but as, according to the opinion of Parmenides, it ought to be expressed. This, however, we find in other ancient authors. Plato often corrects the opinions that he combats, both as to their content and the manner of apprehending them. Thucydides does not put into the mouth of his characters what they really said, but what he would have said in their place. Parmenides adopts the same dramatic procedure; he represents the ordinary view of the world as he himself would regard it if he placed himself on that standpoint, but his design is not to expound his own opinions, but those of others; his whole physical theory has a merely hypothetical import. It is designed to show us how the world of phenomena would present itself to us if we could regard it as a reality. But it is clear from the exposition that the world of phenomena can only be explained on the theory of two primitive elements, one corresponding to Being, and the other to non-Being; and consequently, that it presupposes at all points the Being of non-Being. And therefore it is the more evident that the world of phenomena itself, as distinct from the One and eternal Being, has no claim to Reality. Parmenides, however, did not attempt that thorough dialectical refutation of the ordinary mode of presentation, which, we are told by the most trustworthy testimonies, was the special achievement of Zeno.[1] When a dialectical procedure of this kind, therefore, is ascribed to Parmenides by later writers,[2] they are confusing him with Zeno: only the beginnings of such a method can be recognised in his argument against the Being of non-Being.

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[1] V. 121 (*sup.* p. 597, 3).

ZENO.

PARMENIDES had developed the Eleatic doctrine to a point beyond which it could not be materially carried. It only remained for his successors to defend his views as opposed to the ordinary presentation, and to establish them more precisely in their particular details. The more minutely, however, the relation of the two standpoints was considered, the more distinctly must their entire incompatibility, and the inability of the Eleatic doctrine to explain phenomena, have appeared. On the other hand, where an understanding with ordinary opinion was attempted, the purity of the definitions concerning Being must have immediately suffered. To have seen this constitutes the merit of Zeno and Melissus. For the rest, these two philosophers are agreed both with each other and with Parmenides. The only difference between them is that Zeno, who far excelled Melissus in dialectic ability, maintained the standpoint of his master uncompromisingly, and in sharp opposition to the ordinary view; while Melissus, with less acuteness of intellect, approached somewhat more nearly to the ordinary view, and diverged in some not unimportant respects from the doctrine of Parmenides.

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[1] Authorities will be cited below; for the present it is sufficient to recall Plato, *Parm.* 128 A sqq.

[2] According to Sext. *Math.* vii. 5 sq., some wished to reckon him not only among the Physicists, but also among the Dialecticians. Favorin. ap. Diog. ix. 23, ascribes to him the Achilles puzzle, and Porph. ap. Simpl. *Phys.* 30 a (vide p. 543), the argument from bisection. We shall find, however, that both belong to Zeno. Cf. p. 590, 1.

Zeno,[1] the intimate friend and disciple of Parmenides, seems to have agreed with him on all points. Plato, at any rate, expressly says that he sought in his

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[1] Zeno of Elea, the son of Teleutagoras (Diog. ix. 25, vide p. 580, 1), according to Plato (*Parm.* 127 B) was twenty-five years younger than Parmenides, and at an epoch which must have been about 455–450 B.C., forty years old. This would imply that he was born about 495–490 B.C., and in Ol. 70 or 71. This indication, however, as already observed (*loc. cit.*), is hardly to be regarded as historically accurate. Suidas places Zeno's prime in the 78th Ol.; Diog. ix. 29, in the 79th; Eusebius, in his Chron., in the 80th Olympiad. But these statements are not always very definite, and it is sometimes questionable whether they are based upon actual tradition, or are merely inferences drawn from Plato, or derived from a calculation (Diel's *Rhein. Mus.* xxxi. 35) which makes Zeno forty years younger than his master, whose ἀκμὴ was placed in Ol. 69. It can only be stated with certainty that Zeno was born about the beginning of the fifth century, and appeared as a teacher and author considerably before the middle of that century. His relation to Parmenides is described as very intimate; Plato, *l. c.*, says he was reported to have been his favourite (παιδικά). Athen. xi. 505 sq. takes great offence at this statement; but it need not be taken in a bad sense. According to Apollodor. *ap. Diog. l. c.* Zeno had been the adopted son of Parmenides. Though this is quite possible in itself, yet Plato's silence on the matter makes us suspect that 'adopted son' may have been substituted for favourite, in order to obviate misconstruction of this relationship: and the misapprehended expression. *Soph.* 241 D, may also have related to this. Zeno shares with Parmenides the honourable designation of an ἀνὴρ Πυθαγόρειος (Strabo, vi. 1, i. p. 252) and the glory of having promoted law and order in Elea. He is praised in Diog. ix. 28 for having, from attachment to his home, spent his whole life in Elea without once visiting Athens (οὐκ ἐπιδημήσας τὸ παράπαν πρὸς αὐτούς). But this statement can hardly be true. For if the First Alcibiades be too doubtful a source to guarantee the fact (119 A) that Pythodorus and Callias each paid 100 minæ to Zeno for his instructions, which Callias must certainly have received in Athens, Plutarch, *Per.* c. 4, c. 5, tells us of a residence of Zeno in Athens, during which Pericles associated with him; and this fact may have given occasion to Plato's story of the visit of Parmenides to that city. Zeno is said to have displayed great firmness

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under tortures, inflicted on him in consequence of a rebellion against a tyrant in which he had been implicated. The occurrence itself is abundantly attested: by Heraclides, Demetrius, Antisthenes, Hermippus and others, ap. Diog. ix. 26 sq.; Diodor. *Exc.* p. 557; Wess. Plut. *Garrulit.* c. 8, p. 505; *Sto. Rep.* 37, 3, p. 1051; *Adv. Col.* 32, 10, p. 1126; Philo, *Qu. Omn. Pr. Lib.* 881 C f. Hösch.; Clemens, *Strom.* iv. 496 C; Cic. *Tusc.* ii. 22, 52; N. D. iii. 33, 82; Val. Max. iii. 3, 2 sq.; Tert. *Apologet.* c. 50; Amm. Marc. xiv. 9; Philostr. *V.* Apoll. vii. 2; Suidas, Ἐλέα, etc. The more precise details, however, are variously given. Most of our authorities make Elea the scene of the event; Valerius says Agrigentum, Philostratus, Mysia; Ammianus, confounding Zeno with Anaxarchus, Cyprus. The tyrant is called sometimes Diomedon, sometimes Demylus, sometimes Nearchus; Valerius names Phalaris; Tertullian, Dionysius. Some assert that Zeno gave up his friends to the tyrant; others that, in order to betray no one, he bit out his own tongue; others that he bit off the tyrant's ear. As to the manner of his death also, there is much division of opinion. According to Diogenes, the tyrant was killed; according to Diodorus, Zeno was set free. Valerius represents the occurrence as happening twice, first to this Zeno, and afterwards to a namesake of his (cf. Bayle, *Dict. Zenon d'Elée*, Rem. C). Although therefore the occurrence seems to be historical, nothing further can be determined in regard to it. Whether the allusion ap. Arist. *Rhet.* i. 12, 312 b, 3, refers to this event, and what is the true explanation of it, we do not know. Plato mentions a work which Zeno composed in his early life (*Parm.* 127 C sqq.) as if it were his only known work (it is called simply τὰ Ζήνωνος γράμματα, τὸ σύγγραμμα). Simpl. (*Phys.* 30 a) also mentions a work (το σύγγραμμα) apparently the same spoken of by Plato. It was devoted to a polemic against the ordinary view, refuting by inference the presuppositions of that stand-point. It was divided into several parts (called λόγοι by Plato), and each part into different sections (called by Plato ὑποθέσεις, and by Simpl. ἐπιχειρήματα), in each of which one of the hypotheses of the ordinary point of view was designed to be reduced *ad absurdum* (Proclus *in Parm.* iv. 100 Cous., who by λόγοι understands the several arguments, and by ὑποθέσεις the premisses of the several conclusions; he speaks of 40 λόγοι, and can hardly have seen Zeno's work. David, *Schol. in Arist.* 22 b, 34 sqq., no doubt copies from him). That the work was in prose, we know from Plato, and from the extracts in Simplicius. It is no doubt identical with the book alluded to in Arist. *Soph. El.* c. 10, 170 b, 22, in the words, καὶ ὁ ἀποκρινόμενος καὶ ὁ ἐρωτῶν Ζήνων; for even though there might be questions and answers in this book, yet it need not have been on that account an actual dialogue, and Zeno need not have been the first author of the dialogue, as Diog.

writings to refute the plurality of things, and by this means to prove indirectly the unity of all Being maintained by Parmenides.[1] Thus his conception of Being must have been, in general, the same as that of his master. What we are told of his physical propositions, also, in part coincides with the hypothetical physics of Parmenides. As some of these statements, however, are manifestly untrue, and as our most trustworthy authorities never quote a single physical theory of Zeno's, it is most probable that he did not pursue further this portion of the doctrine of Parmenides.[2]

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iii. 48, asserts with the prefix of *φάσι*. Aristotle himself, if we may judge from this passage of Diog. and Athen. xi. 505 c, did not designate him as such. That Zeno wrote many books does not follow from the use of the plural *βιβλία* ap. Diog. ix. 26, for this may refer to the several parts of his one known work. On the other hand, Suidas names four writings *ἔριδες*, *ἐξήγησις Ἐμπεδοκλέους*, *πρὸς τοὺς φιλοσόφους*, *π. φύσεως*. Of the *ἐξήγησις Ἐμπεδοκλέους*, which, however, is certainly spurious, we find traces elsewhere, vide p. 612. The three others, mentioned only by Eudocia, may be merely different names for the book we have already spoken of. Stallbaum's proposal however(Plut. *Parm.* p. 30) to read *ἔγραψεν ἔριδας πρὸς τοὺς φιλοσόφους περὶ φύσεως*, in Suidas, not only contradicts the received text, but disagrees entirely with the manner in which Suidas and similar authors generally cite the titles of books. According to Simpl. *l.c.*, Alexander and Porphyry cannot have seen Zeno's work; nor does Proclus even seem to have been acquainted with it. Simplicius himself, however, had probably something more than extracts from it, although (vide p. 21 b) he may not have been quite certain that his text was complete. At p. 131 a, he is quoting only from Eudemus.

[1] *Parm.* 127 E: *ἆρα τοῦτό ἐστιν ὃ βούλονταί σου οἱ λόγοι, οὐκ ἄλλο τι ἢ διαμάχεσθαι παρὰ πάντα τὰ λεγόμενα, ὡς οὐ πολλά ἐστι; καὶ τούτου αὐτοῦ οἴει σοι τεκμήριον εἶναι ἕκαστον τῶν λόγων, ὥστε καὶ ἡγεῖ τοσαῦτα τεκμήρια παρέχεσθαι ὅσους περ λόγους γέγραφας, ὡς οὐκ ἔστι πολλά; Οὐκ, ἀλλά, φάναι τὸν Ζήνωνα, καλῶς συνῆκας ὅλον τὸ γράμμα ὃ βούλεται.* Socrates on this remarks that Parmenides and Zeno say the same, the former directly, the latter indirectly. *σὺ μὲν γὰρ* (*Parm.*) *ἐν τοῖς ποιήμασιν ἓν φῂς εἶναι τὸ πᾶν . . . ὅδε δὲ αὖ οὐ πολλά φησιν εἶναι*, and Zeno practically concedes it when he explains more particularly how he came to compose his work (vide p. 613, 1).

[2] Our information on this point is confined to a few passages. Diog. ix. 29, says: *ἀρέσκει δ' αὐτῷ τάδε·*

We can only with certainty ascribe to him those demonstrations which are intended to defend Parmenides' doctrine as opposed to the ordinary presentation.[1]

κόσμους εἶναι, κενόν τε μὴ εἶναι· γεγενῆσθαι δὲ τὴν τῶν πάντων φύσιν ἐκ θερμοῦ καὶ ψυχροῦ καὶ ξηροῦ καὶ ὑγροῦ, λαμβανόντων εἰς ἄλληλα τὴν μεταβολήν· γένεσίν τ' ἀνθρώπων ἐκ γῆς εἶναι καὶ ψυχὴν κρᾶμα ὑπάρχειν ἐκ τῶν προειρημένων κατὰ μηδενὸς τούτων ἐπικράτησιν. Stob. *Ecl.* i. 60: *Μέλισσος καὶ Ζήνων τὸ ἓν καὶ πᾶν καὶ μόνον ἀΐδιον καὶ ἄπειρον τὸ ἕν· καὶ τὸ μὲν ἓν τὴν ἀνάγκην, ὕλην δὲ αὐτῆς τὰ τέσσαρα στοιχεῖα, εἴδη δὲ τὸ νεῖκος καὶ τὴν φιλίαν. λέγει δὲ καὶ τὰ στοιχεῖα θεοὺς, καὶ τὸ μίγμα τούτων τὸν κόσμον, καὶ πρὸς ταῦτα ἀναλυθήσεται* (perhaps *λύεσθαι*) *τὸ μονοειδές·* (all that is apparently of the same kind, as wood, meat, flesh, &c., that which Aristotle calls *ὁμοιομερὲς* resolves itself finally into the four elements) *καὶ θείας μὲν οἴεται τὰς ψυχὰς, θείους δὲ καὶ τοὺς μετέχοντας αὐτῶν καθαροὺς καθαρῶς.* This last exposition reminds us so much of Empedocles, that Heeren (*in h. l.*) thought of substituting the name Empedocles for the singular words *ὕλην δὲ αὐτῆς*. It seems to me the name of Empedocles may have dropped out, either in that place, as Sturz (*Emped.* p. 168) supposes, or more probably (Krische, *Forsch.* i. 123) before the words *τὸ μὲν ἓν*, etc. Or perhaps the whole passage may have been taken from the *ἐξήγησις Ἐμπεδοκλέους* (p. 609, 1, end), ascribed to Zeno. But this work cannot have been genuine; it must originally have borne the name of Zeno the Stoic. In the first place, it is very improbable and wholly without precedent in ancient times, that a philosopher like Zeno should have written a commentary on the work of a contemporary of his own age; and next, it is very strange that, if he did so, he should have selected not the work of his master, but one that was so little in harmony with his own views. Further, it appears from what has been already quoted, p. 610, that Zeno wrote only one book; and the utter silence of Aristotle and his commentators as to any physical utterances of Zeno shows that none were known to them. Lastly, it is clear that, in Stobæus, propositions are ascribed to Zeno which are entirely unknown to him. The same holds good in part of the statements of Diogenes, but the greater number of these are, so far, less improbable, as they agree with the doctrine of Parmenides. Parmenides likewise denied empty space, held the warm and cold to be elements, and taught that mankind arose in the first instance from the earth, and that souls were compounded from the elements. The proposition: *κόσμους εἶναι*, however, cannot have belonged to an Eleatic philosopher, whether we understand by *κόσμοι* a number of synchronous worlds, or successive worlds; Zeno the Eleatic seems to be here confounded with Zeno the Stoic; and what is said of the elements bears evidence of the Stoic-Aristotelian doctrine. There seems also to have been a confusion between the two Zenos in Epiph. *Exp. Fid.* 1087 C: *Ζήνων ὁ Ἐλεάτης ὁ ἐριστικὸς ἴσα τῷ ἑτέρῳ Ζήνωνι καὶ τὴν γῆν ἀκίνητον λέγει καὶ μηδένα τόπον κενὸν εἶναι.*

[1] Stallbaum, *Plat. Parm.* 25

Zeno adopted for this purpose an indirect method. Parmenides had derived his determinations of Being directly from the concept of Being. Zeno proves the same doctrine indirectly by showing that the opposite theories involve us in difficulties and contradictions, and that Being does not admit of our regarding it as a Plurality, as something divisible and changeable. He seeks to prove the Eleatic doctrine by reducing the prevalent mode of presentation to absurdity.[1] Because of this method, which he employed with masterly skill, Zeno was called by Aristotle the inventor of Dialectic,[2] and Plato says that he could make one and the same appear to his hearers as like and unlike, as one and many, as in motion and at rest.[3] Though this Dialectic afterwards furnished many weapons to the Eristic of

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sqq. thinks it was chiefly directed against Anaxagoras and Leucippus; but in the demonstrations of Zeno there is nothing that specially points to either of these men.

[1] In the *Parm.* 25 sqq., Xeno thus continues: ἔστι δὲ τό γε ἀληθὲς βοήθειά τις ταῦτα τὰ γράμματα τῷ Παρμενίδου λόγῳ πρὸς τοὺς ἐπιχειροῦντας αὐτὸν κωμῳδεῖν, ὡς εἰ ἓν ἔστι πολλὰ καὶ γελοῖα συμβαίνει πάσχειν τῷ λόγῳ καὶ ἐναντία αὐτῷ. ἀντιλέγει δὴ οὖν τοῦτο τὸ γράμμα πρὸς τοὺς τὰ πολλὰ λέγοντας καὶ ἀνταποδίδωσι ταῦτα καὶ πλείω, τοῦτο βουλόμενον δηλοῦν, ὡς ἔτι γελοιότερα πάσχοι ἂν αὐτῶν ἡ ὑπόθεσις, εἰ πολλά ἐστιν, ἢ ἡ τοῦ ἓν εἶναι, εἴ τις ἱκανῶς ἐπεξίοι.

[2] Diog. viii. 57; ix. 25; Sext. *Math.* vii. 7. cf. Timon ap. Diog. *l. c.* (Plut. *Pericl.* c. 4; Simpl. *Phys.* 236 b):—

ἀμφοτερογλώσσου τε μέγα σθένος
  οὐκ ἀλαπαδνὸν
Ζήνωνος πάντων ἐπιλήπτορος, ἠδὲ
  Μελίσσου,
πολλῶν φαντασμῶν ἐπάνω, παύρων
  γε μὲν εἴσω.

[3] *Phædr.* 261 D: τὸν οὖν Ἐλεατικὸν Παλαμήδην λέγοντα οὐκ ἴσμεν τέχνῃ ὥστε φαίνεσθαι τοῖς ἀκούουσι τὰ αὐτὰ ὅμοια καὶ ἀνόμοια, καὶ ἓν καὶ πολλά, μένοντά τε αὖ καὶ φερόμενα. That Zeno is here meant, and not Alcidamas (as Quintil. iii. 1, 2, thinks), is evident. Moreover, Plato himself says in *Parm.* 127 E: πῶς, φάναι ὦ Ζήνων, τοῦτο λέγεις; εἰ πολλά ἐστι τὰ ὄντα, ὡς ἄρα δεῖ αὐτὰ ὅμοιά τε εἶναι καὶ ἀνόμοια, τοῦτο δὲ δὴ ἀδύνατον; . . . . οὕτω, φάναι τὸν Ζήνωνα. Similarly, Isocr. *Enc. Hel.* sub init.: Ζήνωνα, τὸν ταὐτὰ δυνατὰ καὶ πάλιν ἀδύνατα πειρώμενον ἀποφαίνειν, for these words no doubt refer, not to any particular argument, but to Zeno's antinomistic procedure generally.

the Sophists, it is itself distinguished from that Eristic[1] by its positive object; and still less, for the same reason, can it be identified with Scepticism.[2] The dialectic argument with Zeno, though it does not altogether disdain Sophistic applications, is never anything but a means to establish a metaphysic conviction, the doctrine of the unity and invariability of Being.

In particular, the arguments of Zeno, so far as we are acquainted with them, are concerned with multiplicity and motion. The arguments against the multiplicity of things which have been transmitted to us have respect to their magnitude, number, Being in space, and co-operation. The arguments against motion are likewise four, which Zeno did not arrange in the best order, nor according to any fixed principle.

I now proceed to examine these arguments collectively:—

A. The Arguments against Multiplicity.

1. If Being were many, it must be at the same time infinitely small and infinitely great. *Infinitely small*; for as every plurality is a number of unities, but a true unity alone is indivisible—so each of the Many must either itself be an indivisible unity, or be made up of such unities. That which is indivisible, however, can have no magnitude; for all that has magnitude is infinitely divisible. The particular parts of which the

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[1] With which it is too closely identified by Plut. *Per.* 4, and ap. Eus. *Pr. Ev.* i. 8, 7; and with which Seneca confuses it, Ep. 88, 44 sq., when he attributes to Zeno the assertion of Gorgias: *Nihil esse ne unum quidem.* This extraordinary statement, perhaps, arose from a misunderstanding of some passage like that quoted from Aristotle, p. 615, 1.

[2] Which, according to Diog. ix. 72, laid claim to it, whereas Timon, *l. c.*, does not.

many consists have consequently no magnitude. If they are added to anything it will not become greater, nor if they are taken away will it become less. But that which, being added to another, does not make it greater, and being taken away from another does not make it less, is nothing. The Many is therefore infinitely small; for each of its constituent parts is so small that it is nothing.[1] On the other hand, however, these parts are also *infinitely great.* For since that which has no magnitude is not, the Many, in order to *be*, must have a magnitude: its parts must consequently be separated from one another—that is, other parts must lie between them. But the same thing holds good of

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[1] Simpl. *Phys.* 30 a: *ἐν μέντοι τῷ συγγράμματι αὐτοῦ πολλὰ ἔχοντι ἐπιχειρήματα καθ' ἕκαστον δείκνυσιν, ὅτι τῷ πολλὰ εἶναι λέγοντι συμβαίνει τὰ ἐναντία λέγειν. ὧν ἕν ἐστιν ἐπιχείρημα, ἐν ᾧ δείκνυσιν, ὅτι εἰ πολλά ἐστι καὶ μεγάλα ἐστὶ καὶ μικρὰ, μεγάλα μὲν ὥστε ἄπειρα τὸ μέγεθος εἶναι, μικρὰ δὲ οὕτως, ὥστε μηδὲν ἔχειν μέγεθος. ἐν δὴ τούτῳ* (in the section which proves that it is infinitely small) *δείκνυσιν, ὅτι οὗ μήτε μέγεθος μήτε πάχος μήτε ὄγκος μηθείς ἐστιν, οὐδ' ἂν εἴη τοῦτο· οὐ γὰρ εἰ ἄλλῳ ὄντι, φησὶ, προσγένοιτο, οὐδὲν ἂν μεῖζον ποιήσειε, μεγέθους γὰρ μηδενὸς ὄντος, προσγενομένου δὲ* (this *δὲ* should no doubt be omitted; it seems to have arisen from the *οὐδὲν* which follows) *οὐδὲν οἷόν τε εἰς μέγεθος ἐπιδοῦναι, καὶ οὕτως ἂν ἤδη τὸ προσγινόμενον οὐδὲν εἴη.* (Zeno must have added here: 'nor could anything become smaller, by its being taken away from it.') *εἰ δὲ ἀπογινομένου τὸ ἕτερον μηδὲν ἔλαττόν ἐστι, μηδὲ αὖ προσγινομένου αὐξήσεται, δηλονότι τὸ προσγενόμενον οὐδὲν ἦν, οὐδὲ τὸ ἀπυγενόμενον.* (This part of the exposition is confirmed by Eudemus, vide *infra*, and by Arist. *Metaph.* iii. 4, 1001 b, 7: *ἔτι εἰ ἀδιαίρετον αὐτὸ τὸ ἕν, κατὰ μὲν τὸ Ζήνωνος ἀξίωμα οὐθὲν ἂν εἴη. ὃ γὰρ μήτε προστιθέμενον μήτε ἀφαιρούμενον ποιεῖ μεῖζον μηδὲ ἔλαττον, οὔ φησιν εἶναι τοῦτο τῶν ὄντων, ὡς δῆλον ὅτι ὄντος μεγέθους τοῦ ὄντος.*) *καὶ ταῦτα οὐχὶ τὸ ἓν ἀναιρῶν ὁ Ζήνων λέγει, ἀλλ' ὅτι, εἰ μέγεθος ἔχει ἕκαστον τῶν πολλῶν καὶ ἀπείρων, οὐδὲν ἔσται ἀκριβῶς ἓν διὰ τὴν ἐπ' ἄπειρον τομήν. δεῖ δὲ ἓν εἶναι. ὃ δείκνυσι, προδείξας ὅτι οὐδὲν ἔχει μέγεθος, ἐκ τοῦ ἕκαστον τῶν πολλῶν ἑαυτῷ ταὐτὸν εἶναι καὶ ἕν. καὶ ὁ Θεμίστιος δὲ τὸν Ζήνωνος λόγον ἓν εἶναι τὸ ὂν κατασκευάζειν φησὶν ἐκ τοῦ συνεχὲς τὸ* (l. *τε*) *αὐτὸ εἶναι καὶ ἀδιαίρετον. εἰ γὰρ διαιροῖτό, φησιν, οὐδὲν ἔσται ἀκριβῶς ἓν διὰ τὴν ἐκ ἄπειρον τομὴν τῶν σωμάτων. ἔοικε δὲ μᾶλλον ὁ Ζήνων λέγειν, ὡς οὐδὲ πολλὰ ἔσται,* The passage in Themist. *Phys.* 18 a, p. 122 Sp.. runs thus: *Ζήνωνος, ὃς ἐκ τοῦ συνεχές τε εἶναι καὶ ἀδιαίρετον ἓν εἶναι τὸ ὂν κατεσκεύαζε, λέγων, ὡς εἰ διαιρεῖται οὐδὲ ἔσται ἀκριβῶς ἓν διὰ τὴν ἐπ' ἄπειρον τομὴν τῶν σωμάτων.* From the connection in which this assertion of Zeno's stood (according to Simplicius), it appears that Simplicius' criticism of Themist. is correct. Zeno is not speaking primarily of the One Being; but starting from the presupposition of Multiplicity, he is telling us how each of the many things must then be conceived. So far as he at the same time shows

that each thing, in order to be one, must also be indivisible, his assertion might likewise be applied to the One Being; this, too, in order to be one, must be indivisible (ἓν συνεχές). Eudemus seems to have had this argument in view when he says, ap. Simpl. *Phys.* 21 a (cf. 30 a, 31 a): Ζήνωνά φασι λέγειν, εἴ τις αὐτῷ τὸ ἓν ἀποδοίη τί ποτέ ἐστι λέξειν [ἔστιν, ἕξειν] τὰ ὄντα λέγειν· ἠπόρει δὲ ὡς ἔοικε (Brandis, i. 416, has this from MSS. In the printed text these words are wanting, but they occur p. 30 a) διὰ τὸ τῶν μὲν αἰσθητῶν ἕκαστον κατηγορικῶς τε πολλὰ λέγεσθαι καὶ μερισμῷ, τὴν δὲ στιγμὴν μηδὲ ἓν τιθέναι. ὃ γὰρ μήτε προστιθέμενον αὔξει μήτε ἀφαιρούμενον μειοῖ οὐκ ᾤετο τῶν ὄντων εἶναι. Simpl. 21 b, observes on this: ὁ μὲν τοῦ Ζήνωνος λόγος ἄλλος τις ἔοικεν οὗτος εἶναι παρ' ἐκεῖνον τὸν ἐν βιβλίῳ φερόμενον οὗ καὶ ὁ Πλάτων ἐν τῷ Παρμενίδῃ μέμνηται. ἐκεῖ μὲν γὰρ ὅτι οὐκ ἔστι πολλὰ δείκνυσι . . . ἐνταῦθα δὲ, ὡς Εὔδημός φησι, καὶ ἀνῄρει τὸ ἕν. τὴν γὰρ στιγμὴν ὡς τὸ ἓν εἶναι λέγει, τὰ δὲ πολλὰ εἶναι συγχωρεῖ. ὁ μέντοι Ἀλέξανδρος καὶ ἐνταῦθα τοῦ Ζήνωνος ὡς τὰ πολλὰ ἀναιροῦντος μεμνῆσθαι τὸν Εὔδημον οἴεται. "ὡς γὰρ ἱστορεῖ, φησιν, Εὔδημος, Ζήνων ὁ Παρμενίδου γνώριμος ἐπειρᾶτο δεικνύναι ὅτι μὴ οἷόν τε τὰ ὄντα πολλὰ εἶναι, τῷ μηδὲν εἶναι ἐν τοῖς οὖσιν ἕν, τὰ δὲ πολλὰ πλῆθος εἶναι ἑνάδων." καὶ ὅτι μὲν οὐχ ὡς τὰ πολλὰ ἀναιροῦντος Ζήνωνος Εὔδημος μέμνηται, νῦν δῆλον ἐκ τῆς αὐτοῦ λέξεως. οἶμαι δὲ μήτε [μηδὲ] ἐν τῷ Ζήνωνος βιβλίῳ τοιοῦτον ἐπιχείρημα φέρεσθαι, οἷον ὁ Ἀλέξανδρός φησι. It is clear, however, from this passage that Alexander correctly apprehended the meaning of Zeno's proposition, and no doubt that of Eudemus, and that Simplicius here makes the same mistake which he afterwards himself corrects in Themistius. Zeno says: In order to know what things are, we must know what the smallest parts are out of which they are compounded; but this does not imply that since they are the smallest parts, they are indivisible points, and, as invisible points, are without magnitude, and consequently nothing. He wants to prove (as Philop. *Phys.* B. 1 o, 15, observes, not without some interpolation of his own comments) that there can be no multiplicity, for every multiplicity consists of unities; but among all the things which present themselves to us as a multiplicity, among all συνεχῆ, nothing is really One. Brandis, i. 416, wrongly constructs an independent demonstration out of what Eudemus and Aristotle, *l. c.*, say; and Ritter, i. 522, deduces from the statement of Eudemus the bold theory that Zeno, like Parmenides, acknowledged that the full and true knowledge of the One was not contained in his definitions of it. My reasons for disagreeing with both these opinions will appear in the course of the present exposition.

these parts: they also must have a magnitude, and be separated from one another, and so on to infinity. Thus we get an infinite number of magnitudes, or an infinite magnitude.[1]

2. By the same process, Zeno shows also that the Many in respect of number must be as much limited as unlimited. Limited, for it is just so much as it is; not more and not less. Unlimited, for two things are two, only where they are separated; and in order that they may be separate, something must be between them; similarly between this and each of the two, and so on *ad infinitum.*[2] As in the first argument, the determination of infinite magnitude, so here the determination of infinite number is attained by apprehending plurality as a multiplicity of separate magnitudes, and by introducing between each two of these separate magnitudes a third separating magnitude. The ancients usually designate this portion

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[1] Simplicius, *l. c.* 30 b, after having discussed the argument from division, which will be quoted immediately—proceeds thus: καὶ οὕτω μὲν τὸ κατὰ τὸ πλῆθος ἄπειρον ἐκ τῆς διχοτομίας ἔδειξε. τὸ δὲ κατὰ τὸ μέγεθος πρότερον κατὰ τὴν αὐτὴν ἐπιχείρησιν. προδείξας γὰρ, ὅτι εἰ μὴ ἔχει τὸ ὂν μέγεθος οὐδ' ἂν εἴη, ἐπάγει. "εἰ δὲ ἔστιν, ἀνάγκη, ἕκαστον μέγεθός τι ἔχειν καὶ πάχος καὶ ἀπέχειν αὐτοῦ τὸ ἕτερον ἀπὸ τοῦ ἑτέρου, καὶ περὶ τοῦ προὔχοντος ὁ αὐτὸς λόγος· καὶ γὰρ ἐκεῖνο ἕξει μέγεθος καὶ προέξει αὐτοῦ τι, ὅμοιον δὴ τοῦτο ἅπαξ τε εἰπεῖν καὶ ἀεὶ λέγειν. οὐδὲν γὰρ αὐτοῦ τοιοῦτον ἔσχατον ἔσται οὔτε ἕτερον πρὸς ἕτερον οὐκ ἔσται. οὕτως, εἰ πολλά ἐστιν, ἀνάγκη αὐτὰ μικρά τε εἶναι καὶ μεγάλα. μικρὰ μὲν ὥστε μὴ ἔχειν μέγεθος, μεγάλα δὲ ὥστε ἄπειρα εἶναι." By προέχον I understand that which lies before another, and thereby keeps that other at a distance from a third.

[2] Simpl. *l. c.* 30 b: δεικνὺς γὰρ, ὅτι εἰ πολλά ἐστι τὰ αὐτὰ πεπερασμένα ἐστὶ καὶ ἄπειρα, γράφει ταῦτα κατὰ λέξιν ὁ Ζήνων· "εἰ πολλά ἐστιν, ἀνάγκη τοσαῦτα εἶναι ὅσα ἐστὶ καὶ οὔτε πλείονα αὐτῶν οὔτε ἐλάττονα. εἰ δὲ τοσαῦτά ἐστιν ὅσα ἐστὶ, πεπερασμένα ἂν εἴη. καὶ πάλιν, εἰ πολλά ἐστιν, ἄπειρα τὰ ὄντα ἐστίν. ἀεὶ γὰρ ἕτερα μεταξὺ τῶν ὄντων ἐστὶ, καὶ πάλιν ἐκείνων ἕτερα μεταξὺ, καὶ οὕτως ἄπειρα τὰ ὄντα ἐστί." καὶ οὕτω μὲν, etc. (vide preceding note).

of Zeno's two arguments as the argument from bisection.[1]

3. Since all that exists, exists in space, space must itself be in a space, and so *ad infinitum.* As this is inconceivable, the existent generally cannot be in space.[2]

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[1] Arist. *Phys.* i. 3, 187 a, 1, after Parmenides and Melissus' doctrine of the unity of the one has been discussed in detail: ἔνιοι δ' (the Atomists) ἐνέδοσαν τοῖς λόγοις ἀμφοτέροις, τῷ μὲν ὅτι πάντα ἕν, εἰ τὸ ὂν ἓν σημαίνει, ὅτι ἔστι τὸ μὴ ὄν, τῷ δὲ ἐκ τῆς διχοτομίας ἄτομα ποιήσαντες μεγέθη. Simpl. p. 30 a, observes on this passage: τὸν δὲ δεύτερον λόγον τὸν ἐκ τῆς διχοτομίας τοῦ Ζήνωνος εἶναί φησιν ὁ Ἀλέξανδρος λέγοντος, ὡς εἰ μέγεθος ἔχοι τὸ ὂν καὶ διαιροῖτο, πολλὰ τὸ ὂν καὶ οὐκέτι ἓν ἔσεσθαι καὶ διὰ τούτου δεικνύντος, ὅτι μηδὲν τῶν ὄντων ἐστὶ τὸ ἕν. This last is rightly questioned by Simpl. and the source of the error is traced to the passage of Eudemus, quoted p. 616. Then follow the statements quoted p. 615, as to the argument of Zeno, and then, p. 30 a, this observation: ὁ μέντοι Πορφύριος καὶ τὸν ἐκ τῆς διχοτομίας λόγον Παρμενίδου φησὶν εἶναι, ἓν τὸ ὂν ἐκ ταύτης πειρωμένου δεικνύναι. γράφει δὲ οὕτως· "ἕτερος δὲ ἦν λόγος τῷ Παρμενίδῃ ὁ διὰ τῆς διχοτομίας, οἰόμενος δεικνύναι τὸ ὂν ἓν εἶναι μόνον καὶ τοῦτο ἀμερὲς καὶ ἀδιαίρετον. εἰ γὰρ εἴη, φησὶ, διαιρετὸν, τετμήσθω δίχα, κἄπειτα τῶν μερῶν ἑκάτερον δίχα· καὶ τούτου ἀεὶ γινομένου δῆλόν, φησιν, ὡς ἤτοι ὑπομενεῖ τινὰ ἔσχατα μεγέθη ἐλάχιστα καὶ ἄτομα πλήθει δὲ ἄπειρα καὶ τὸ ὅλον ἐξ ἐλαχίστων πλήθει δὲ ἀπείρων συστήσεται, ἢ φροῦδον ἔσται καὶ εἰς οὐδὲν ἔτι διαλυθήσεται καὶ ἐκ τοῦ μηδενὸς συστήσεται, ἅπερ ἄτοπα. οὐκ ἄρα διαιρεθήσεται, ἀλλὰ μενεῖ ἕν. καὶ γὰρ δὴ ἐπειδὴ πάντῃ ὅμοιόν ἐστιν, εἴπερ διαιρετὸν ὑπάρχει πάντῃ ὁμοίως ἔσται διαιρετὸν, ἀλλ' οὐ τῇ μὲν τῇ δ' οὔ. διῃρήσθω πάντῃ. δῆλον οὖν πάλιν, ὡς οὐδὲν ὑπομενεῖ, ἀλλ' ἔσται φροῦδον, καὶ εἴπερ συστήσεται πάλιν ἐκ τοῦ μηδενὸς συστήσεται· εἰ γὰρ ὑπομενεῖ τι, οὐδέπω γενήσεται πάντῃ διῃρημένον ὥστε καὶ ἐκ τούτων φανερόν, φησιν, ὡς ἀδιαίρετόν τε καὶ ἀμερὲς καὶ ἓν ἔσται τὸ ὄν" . . . (the remainder of the quotation does not belong to this subject) ἐφιστάνειν δὲ ἄξιον, εἰ Παρμενίδου καὶ μὴ Ζήνωνός ἐστιν ὁ λόγος, ὡς καὶ τῷ Ἀλεξάνδρῳ δοκεῖ. οὔτε γὰρ ἐν τοῖς Παρμενιδείοις ἔπεσι λέγεταί τι τοιοῦτον, καὶ ἡ πλείστη ἱστορία τὴν ἐκ τῆς διχοτομίας ἀπορίαν εἰς τὸν Ζήνωνα ἀναπέμπει, καὶ δὴ καὶ ἐν τοῖς περὶ κινήσεως λόγοις ὡς Ζήνωνος ἀπομνημονεύεται (cf. *infra*, the first and second arguments against motion) καὶ τί δεῖ πολλὰ λέγειν, ὅτε καὶ ἐν αὐτῷ φέρεται τῷ τοῦ Ζήνωνος συγγράμματι. δεικνὺς γὰρ, etc. These reasons of Simplicius are quite convincing. Porphyry thinks that the argument from dichotomy must belong to Parmenides, simply because Aristotle, *l. c.*, mentions it in his critique on the doctrine of Parmenides, without mentioning Zeno. He himself is unacquainted with Zeno's work; what he says about this argument he derives from other sources, and he does not give it in the original acceptation of Zeno.

[2] Arist. *Phys.* iv. 3, 210 b, 22: ὃ δὲ Ζήνων ἠπόρει, ὃ τι εἰ ἔστι τι ὁ τόπος, ἐν τίνι ἔσται, λύειν οὐ χαλε-

4. A fourth argument is indicated in the statement that if the shaking out of a bushel of corn produces a sound, each individual grain and each sub-division of a grain must likewise produce sound, which seems to contradict our perceptions.[1] The general question here is—How is it possible that many things together can produce an effect which each of them taken separately does not produce?

B. The Arguments against Motion.

As the arguments just quoted were directed against multiplicity in order to prove the unity of Being, the first main principle of the Eleatic doctrine, so the next four are directed against motion, in order to

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πόν. c. 1, 209 a, 23: *ἡ γὰρ Ζήνωνος ἀπορία ζητεῖ τινα λόγον· εἰ γὰρ πᾶν τὸ ὂν ἐν τόπῳ, δῆλον ὅτι καὶ τοῦ τόπου τόπος ἔσται καὶ τοῦτο εἰς ἄπειρον πρόεισιν.* Eudemus, ap. Simpl. *Phys.* 131 a: *ἐπὶ ταὐτὸν δὲ καὶ ἡ Ζήνωνος ἀπορία φαίνεται ἄγειν· ἄξιον* [*ἀξιοῖ* cf. in what follows: *εἰ μὲν οὖν ἐν τόπῳ ἠξίωκεν εἶναι τὰ ὄντα*] *γὰρ πᾶν τὸ ὂν ποῦ εἶναι, εἰ δὲ ὁ τόπος τῶν ὄντων, ποῦ ἂν εἴη οὐκοῦν ἐν ἄλλῳ τόπῳ. κἀκεῖνος δὴ ἐν ἄλλῳ καὶ οὕτως εἰς τὸ πρόσω.* Simpl. 130 b: *ὁ Ζήνωνος λόγος ἀναιρεῖν ἐδόκει τὸν τύπον ἐρωτῶν οὕτως· εἰ ἔστιν ὁ τόπος ἐν τίνι ἔσται; πᾶν γὰρ ὂν ἔν τινι· τὸ δὲ ἔν τινι καὶ ἐν τόπῳ· ἔσται ἄρα καὶ ὁ τόπος ἐν τόπῳ· καὶ τοῦτο ἐπ' ἄπειρον· οὐκ ἄρα ἔστιν ὁ τόπος.* Similarly *ibid.* 124 b.

[1] Arist. *Phys.* vii. 5, 250 a, 19: *διὰ τοῦτο ὁ Ζήνωνος λόγος οὐκ ἀληθής, ὡς ψοφεῖ τῆς κέγχρου ὁτιοῦν μέρος.* Simpl. *in h. l.* 255 a, says: *διὰ τοῦτο λύει καὶ τὸν Ζήνωνος τοῦ Ἐλεάτου λόγον ὃν ἤρετο Πρωταγόραν τὸν σοφιστήν· εἰπὲ γάρ μοι, ἔφη, ὦ Πρωταγόρα, ἆρα ὁ εἷς κέγχρος καταπεσὼν ψόφον ποιεῖ, ἢ τὸ μυριοστὸν τοῦ κέχρου; τοῦ δὲ εἰπόντος, μὴ ποιεῖν· ὁ δὲ μέδιμνος τῶν κέγχρων καταπεσὼν ποιεῖ ψόφον ἢ οὔ; τοῦ δὲ ψοφεῖν εἰπόντος τὸν μέδιμνον, τί οὖν, ἔφη ὁ Ζήνων, οὐκ ἔστι λόγος τοῦ μεδίμνου τῶν κέγχρων πρὸς τὸν ἕνα καὶ τὸ μυριοστὸν τοῦ ἑνός; τοῦ δὲ φήσαντος εἶναι· τί οὖν, ἔφη ὁ Ζήνων, οὐ καὶ τῶν ψόφων ἔσονται λόγοι πρὸς ἀλλήλους οἱ αὐτοί; ὡς γὰρ τὰ ψοφοῦντα καὶ οἱ ψόφοι. τούτου δὲ οὕτως ἔχοντος, εἰ ὁ μέδιμνος τοῦ κέγχρου ψοφεῖ ψοφήσει καὶ ὁ εἷς κέγχρος καὶ τὸ μυριοστὸν τοῦ κέγχρου.* (The latter also, p. 256 b.) According to this representation we cannot suppose that this argument was to be found in Zeno's book; and its more complete development in Simplicius may have belonged to some later philosopher. But its essential thought is certified by Aristotle.

prove the second fundamental basis of the system, the unchangeableness of Being.[1]

1. The first argument is this:—Before the body that is moved can arrive at the goal, it must first have arrived at the middle of the course; before it reaches this point it must have arrived at the middle of the first half, and previously to that at the middle of the first quarter, and so *ad infinitum*. Every body, therefore, in order to attain to one point from another, must pass through infinitely many spaces. But the infinite cannot be passed through in a given time. It is consequently impossible to arrive at one point from another, and motion is impossible.[2]

2. The so-called Achilles argument is only another application of this.[3] The slowest creature, the tortoise,

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[1] Cf. in regard to these, Gerling, *De Zen. paralogismis motum spectant*. Marb. 1825; Wellmann's *Zeno's Beweise gegen die Bewegung und ihre Widerlegungen*. Frankf. 1870.

[2] Arist. *Phys.* vi. 9, 239 b, 9: *τέτταρες δ' εἰσὶ λόγοι περὶ κινήσεως Ζήνωνος οἱ παρέχοντες τὰς δυσκολίας τοῖς λύουσιν. πρῶτος μὲν ὁ περὶ τοῦ μὴ κινεῖσθαι διὰ τὸ πρότερον εἰς τὸ ἥμισυ δεῖν ἀφικέσθαι τὸ φερόμενον ἢ πρὸς τὸ τέλος, περὶ οὗ διείλομεν ἐν τοῖς πρότερον λόγοις*, especially c. 2, 233 a, 21, where we read: *διὸ καὶ ὁ Ζήνωνος λόγος ψεῦδος λαμβάνει τὸ μὴ ἐνδέχεσθαι τὰ ἄπειρα διελθεῖν ἢ ἅψασθαι τῶν ἀπείρων καθ' ἕκαστον ἐν πεπερασμένῳ χρόνῳ.* Simpl. 236 b (cf. 221 a, 302 a). Themistius gives a shorter and more obscure comment (*Phys.* 55 b, 392 sq.): *εἰ ἔστι κίνησις, ἀνάγκη τὸ κινούμενον ἐν πεπερασμένῳ χρόνῳ ἄπειρα διεξιέναι· τοῦτο δὲ ἀδύνατον· οὐκ ἄρα ἔστι κίνησις. ἐδείκνυ δὲ τὸ συνημμένον* (the hypothetical major premiss) *ἐκ τοῦ τὸ κινούμενον διάστημά τι κινεῖσθαι, παντὸς δὲ διαστήματος ἐπ' ἄπειρον ὄντος διαιρετοῦ τὸ κινούμενον ἀνάγκη τὸ ἥμισυ πρῶτον διελθεῖν οὗ κινεῖται διαστήματος καὶ τότε τὸ ὅλον. ἀλλὰ καὶ πρὸ τοῦ ἡμίσεως τοῦ ὅλου τὸ ἐκείνου ἥμισυ, καὶ τούτου πάλιν τὸ ἥμισυ. εἰ οὖν ἄπειρα τὰ ἡμίση διὰ τὸ παντὸς τοῦ ληφθέντος δυνατὸν εἶναι τὸ ἥμισυ λαβεῖν, τὰ δὲ ἄπειρα ἀδύνατον ἐν πεπερασμένῳ χρόνῳ διελθεῖν, τοῦτο δὲ ὡς ἐναργὲς ἐλάμβανεν ὁ Ζήνων, ἀδύνατον ἄρα κίνησιν εἶναι.* Arist. *Top.* viii. 8, 156 b, 7, and Sext. *Math.* x. 47 refer to this proof.

[3] Favorinus, ap. Diog. ix. 29, says that Parmenides had already employed this argument; but the statement is certainly false. All other evidence ascribes it to Zeno. Diog. *l. c.* says expressly that it was discovered by him; and all

could never be overtaken by the swiftest, Achilles, if it had once made a step in advance of him. For in order to overtake the tortoise, Achilles must first reach the point where the tortoise was when he started; next the point to which it had progressed in the interval, then the point which it attained while he made this second advance, and so on *ad infinitum*. But if it be impossible that the slower should be overtaken by the swifter, it is, generally speaking, impossible to reach a given end, and motion is impossible.[1] The whole argument turns, as in the other case, upon the assertion that a given space cannot be traversed unless all its parts are traversed; which is not possible, because there is an infinite number of these parts.[2] The only difference is that this assertion is applied in the first case to a space with fixed boundaries, and in the second, to a space with movable boundaries.

3. So long as anything remains in one and the same space, it is at rest. But the flying arrow is at every moment in the same space. It rests, therefore, at every moment of its flight: therefore its motion

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that we know of Parmenides (cf. the often quoted passage, *Parm.* 128 A) proves that he did not apply himself in this manner to the dialectical refutation of the ordinary standpoint.

[1] Arist. *l. c.* 239 b, 14: *δευτέρος δ' ὁ καλούμενος Ἀχιλλεύς· ἔστι δ' οὗτος, ὅτι τὸ βραδύτερον οὐδέποτε καταληφθήσεται θέον ὑπὸ τοῦ ταχίστου· ἔμπροσθεν γὰρ ἀναγκαῖον ἐλθεῖν τὸ διῶκον, ὅθεν ὥρμησε τὸ φεῦγον, ὥστ' ἀεί τι προέχειν ἀναγκαῖον τὸ βραδύτερον.* Simpl. 237 a, and Themist. 56 a, explain this in the sense given in our text.

[2] As Aristotle rightly observes in the words: *ἔστι δὲ καὶ οὗτος ὁ αὐτὸς λόγος τῷ διχοτομεῖν* (the same as the first argument based upon bi-partition) *διαφέρει δ' ἐν τῷ διαιρεῖν μὴ δίχα τὸ προσλαμβανόμενον μέγεθος . . . ἐν ἀμφοτέροις γὰρ συμβαίνει μὴ ἀφικνεῖσθαι πρὸς τὸ πέρας διαιρουμένου πως τοῦ μεγέθους· ἀλλὰ πρόσκειται ἐν τούτῳ, ὅτι οὐδὲ τὸ τάχιστον τετραγῳδημένον ἐν τῷ διώκειν τὸ βραδύτατον.* Similarly, the commentators.

during the whole course is only apparent.[1] This argument, too, is based on the same process as the two previous arguments. In them, the space to be traversed, and here the time of the movement, is resolved into its minutest parts; and it is shown upon this presupposition, that no motion is thinkable. The latter argument is, as Aristotle acknowledges, quite correct.

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[1] Arist. 239 b, 30: *τρίτος δ' ὁ νῦν ῥηθεὶς ὅτι ἡ ὀϊστὸς φερομένη ἕστηκεν.* Cf. l. 5: *Ζήνων δὲ παραλογίζεται· εἰ γὰρ ἀεί, φησιν, ἠρεμεῖ πᾶν ἢ κινεῖται, ὅταν ᾖ κατὰ τὸ ἴσον, ἔστι δ' ἀεὶ τὸ φερόμενον ἐν τῷ νῦν, ἀκίνητον τὴν φερομένην εἶναι ὀϊστόν.* For *ἐν τῷ νῦν ἀκίν.* others read: *ἐν τῷ νῦν τῷ κατὰ ἴσον ἀκίνητον.* Gerling, *l. c.* p. 16, would substitute *ᾖ κινεῖται* for *ἢ κινεῖται.* I am inclined to think that the text, which in its present form presents many difficulties, and has not been, to my mind, satisfactorily explained even by Prantl., originally ran thus: *εἰ γάρ, φησιν, ἠρεμεῖ πᾶν, ὅταν ᾖ κατὰ τὸ ἴσον, ἔστι δ' ἀεὶ τὸ φερόμενον ἐν τῷ νῦν κατὰ τὸ ἴσον, ἀκίνητον,* &c., from which would result the meaning given above. Themistius (p. 55 b, p. 392 Sp.) likewise seems to presuppose this form of the words, when he paraphrases them thus: *εἰ γὰρ ἠρεμεῖ, φησιν, ἅπαντα ὅταν ᾖ κατὰ τὸ ἴσον αὐτῷ διάστημα, ἔστι δὲ ἀεὶ τὸ φερόμενον κατὰ τὸ ἴσον ἑαυτῷ διάστημα, ἀκίνητον ἀνάγκη τὴν ὀϊστὸν εἶναι τὴν φερομένην.* Similarly, p. 56 a, 394 Sp.: *ἀεὶ μὲν γὰρ ἕκαστον τῶν κινουμένων ἐν τῷ νῦν τὸ ἴσον ἑαυτῷ κατέχει διάστημα.* Aristotle's observation against Zeno, *l. c.*, that his whole argument is based upon the false theory of time being compounded of particular moments (*ἐκ τῶν νῦν τῶν ἀδιαιρέτων*) is quite in harmony with this. On the other hand, Simplicius says, 236 b, agreeing with the text of our MSS.: *ὁ δὲ Ζήνωνος λόγος προλαβών, ὅτι πᾶν ὅταν ᾖ κατὰ τὸ ἴσον ἑαυτῷ ἢ κινεῖται ἢ ἠρεμεῖ, καὶ ὅτι οὐδὲν ἐν τῷ νῦν κινεῖται, καὶ ὅτι τὸ φερόμενον ἀεὶ ἐν τῷ ἴσῳ αὐτῷ ἐστι καθ' ἕκαστον νῦν, ἐῴκει συλλογίζεσθαι οὕτως· τὸ φερόμενον βέλος ἐν παντὶ νῦν κατὰ τὸ ἴσον ἑαυτῷ ἐστιν, ὥστε καὶ ἐν παντὶ τῷ χρόνῳ. τὸ δὲ ἐν τῷ νῦν κατὰ τὸ ἴσον ἑαυτῷ ὂν οὐ κινεῖται, ἠρεμεῖ ἄρα, ἐπειδὴ μηδὲν ἐν τῷ νῦν κινεῖται, τὸ δὲ μὴ κινούμενον ἠρεμεῖ, ἐπειδὴ πᾶν ἢ κινεῖται ἢ ἠρεμεῖ. τὸ ἄρα φερόμενον βέλος ἕως φέρεται ἠρεμεῖ κατὰ πάντα τὸν τῆς φορᾶς χρόνον.* This deduction has none of the seeming conclusiveness which we always find in Zeno's demonstrations. Simplicius, it is true, deserves attention because he was acquainted with Zeno's work; but, on the other hand, we must not forget the excellent remark of Schleiermacher (Ueber Anaximandros, *Werke z. Phil.* ii. 180) that Simplicius in the later books of his work took no account of the sources he had used in the earlier books. I agree with Themistius and Simplicius in understanding *εἶναι κατὰ τὸ ἴσον* to mean, 'to be in the same space' as previously, not to alter its place.

In the moment as such, no movement, no change generally speaking, is possible; if I ask where the flying arrow is at this moment, the answer cannot be in the transition from the space A to the space B, or in other words, in A *and* B; the answer can only be in the space A. Consequently, if time is conceived as an infinite series of successive moments, instead of a fixed quantity, we necessarily get, instead of the transition from one space to another, merely a successive Being in separate spaces: and motion is just as impossible as if (similarly to the first and second of Zeno's arguments) we suppose, instead of the line to be traversed, an infinite number of successive and separate points.[1] The argument before us is therefore not so sophistical as it appears to be; at any rate it is not more sophistical than the others. It starts, like them, from the perception of a philosophic problem in which more recent thinkers have also found considerable difficulties; and it stands in the same connections with Zeno's general point of view. If Unity and Multiplicity be once regarded in the manner of the Eleatics as absolute contradictories positively excluding one another, separation in time and space may easily be looked upon as a plurality devoid of unity; space and time as an aggregation of separate points of space and time, and a transition from one of these points to another,—a motion,—becomes impossible.[2]

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[1] That this is really the force of the argument is also implied by Aristotle, in his short counter-observation (vide previous note).

[2] There is a reference to the fundamental thought of this argument in what is quoted as from Zeno in Diog. ix. 72 (as Kern, *Xenoph*. 26, 74, reminds us): *τὸ κινούμενον οὔτ' ἐν ᾧ ἔστι τόπῳ κινεῖται οὔτ' ἐν ᾧ μὴ ἔστι*: for that it cannot move in the space in

4. The fallacy in the fourth demonstration is more apparent. This refers to the relation of the time of movement to the space which has to be traversed. According to the laws of motion, spaces of equal size must be traversed in equal time if the speed be equal. But two bodies of equal size move past one another twice as fast if they are both moving at equal speed, as if one of them is still, and the other with the same motion passes by it. Hence Zeno ventures to conclude that in order to traverse the same space,—the space taken up by each of these two bodies,—at the same speed, only half the time is necessary in the one case that is necessary in the other. Consequently, he thinks, facts here contradict the laws of motion.[1]

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which it is, is proved by the observation that it is in the same space in every moment.

[1] Arist. 239 b, 33: τέταρτος δ' ὁ περὶ τῶν ἐν τῷ σταδίῳ κινουμένων ἐξ ἐναντίας ἴσων ὄγκων παρ' ἴσους, τῶν μὲν ἀπὸ τέλους τοῦ σταδίου τῶν δ' ἀπὸ μέσου (on the meaning of this expression vide Prantl. *in h. l.* p. 516) ἴσῳ τάχει, ἐν ᾧ συμβαίνειν οἴεται, ἴσον εἶναι χρόνον τῷ διπλασίῳ τὸν ἥμισυν. ἔστι δ' ὁ παραλογισμὸς ἐν τῷ τὸ μὲν παρὰ κινούμενον τὸ δὲ παρ' ἠρεμοῦν τὸ ἴσον μέγεθος ἀξιοῦν τῷ ἴσῳ τάχει τὸν ἴσον φέρεσθαι χρόνον· τοῦτο δ' ἐστὶ ψεῦδος. That the argument referred to in these words has the meaning we have assigned to it is beyond question; but the manner in which Zeno more precisely explained it is doubtful, partly on account of the uncertainty of the reading, and partly because of the extreme brevity of Aristotle's elucidation. Simplicius seems to me to give the best text and the truest explanation of it (p. 237 b sq.), and even Prantl's view of the passage, in other respects satisfactory, may find its completion here. According to Simplicius, Zeno's argument runs thus: Let there be in the space, or in the course, D . . . E, three equal rows of equal bodies, A1 . . ., B1 . . ., C1 . . ., as shown in figure 1. Let the first row A1, remain still; while the two others, with equal velocity, move past it in a parallel and opposite direction to it and to one

1 D	.	.	.	.	.	.	. E
		A1	A2	A3	A4		
B4	B3	B2	B1				
				C1	C2	C3	C4

2				
	A1	A2	A3	A4
	B4	B3	B2	B1
	C1	C2	C3	C4

The falsity of this conclusion strikes us at once; but we must not therefore suppose that Zeno was not perfectly in earnest regarding it. For the whole fallacy is based upon this: that the space traversed by one body is measured according to the size of the bodies which it passes, whether these be in motion or at rest. That this is not allowable might well, however, escape the notice of the first philosopher who studied the laws of motion generally; especially if, like Zeno, he were convinced, to start with, that his enquiry would result in contradictions. Similar paralogisms have been overlooked even by modern philosophers in their polemic against empirical conceptions.

This is not the place to criticise the scientific value of Zeno's demonstrations, the censures of Aristotle in regard to them, or the judgments passed by the moderns[1] on both. Whatever the absolute worth of these arguments may be, their historical importance is, in any case, not to be underrated. On the one hand,

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another. C1 will arrive at A1 and B4 at the same moment that B1 has arrived at A4 and C4 (vide figure 2). B1 has, therefore, passed all the Cs, and C1 all the Bs in the same time that each of them passed the half of the As. Or, as Zeno seems to have expressed it, C1 has passed all the Bs in the same time, in which B1 has passed half of the As; and B1 has passed all the Cs in the same time in which C1 has passed half of the As. But the row A takes up the same space as each of the other two rows. The time in which C1 has passed through the whole space of the row A, is consequently the same as that in which B1, with equal velocity, has passed through the half of this space, and *vice versâ*. But since the velocities being equal, the times of movement are to one another as the spaces traversed, the latter time can be only half as great as the former; the whole time, therefore, is equal to the half.

[1] E.g. Bayle, *Dict. Zénon d'Elée Rem. F.*; Hegel, *Gesch. d. Phil.* i. 290 sq.; Herbart, *Metaphysik*, ii. § 284 sq.; *Lehrb. z. Einl. in d. Phil.* § 139; Strümpell, *Gesch. d. theoret. Phil. b. d. Gr.* 53 sq.; Cousin, *Zénon d'Elée Fragm. Phil.* i. 65 sqq.; Gerling, *l. c.*; and Wellmann, *l. c.* 12 sq., and 20 sq.

the opposition of the Eleatic doctrine to the ordinary point of view attains in them its climax; multiplicity and change are not opposed by Zeno as by Parmenides with general arguments which might be met by other general propositions; their impossibility is proved by these notions themselves; and thus any impression which might still be left by the exposition of Parmenides that side by side with the One Being the many and the variable may still somehow find place, is entirely done away.[1] On the other hand, however, problems were thus proposed to philosophy in regard to the explanation of phenomena, the consideration of which it has never since been able to evade. The apparent insolubility of these problems afforded welcome support to the Sophists in their denial of knowledge; but they afterwards gave a lasting impulse to the most searching enquiries of Plato and Aristotle, and even modern metaphysics has constantly been forced to return again and again to the questions first brought under discussion by Zeno. However unsatisfactory for us may be the immediate result of his Dialectic, it has therefore been of the highest importance to science.

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[1] Cousin, indeed, says exactly the contrary (*l. c.*, cf. especially p. 65, 70 sqq.) when he maintains that Zeno meant to dispute not multiplicity in general, but only multiplicity devoid of all unity. But of such a limitation there is no trace either in Zeno's arguments, or in the introduction to Plato's *Parmenides*. His arguments are directed quite universally against the notion of plurality, of motion, &c., and if, for the purpose of confuting these notions, pure separation without continuity, pure multiplicity without unity, is presupposed, this pre-supposition is not the point which is *attacked*, but the point from which the attack starts. If plurality generally be assumed, Zeno thinks the theory must necessarily lead to the cancelling of unity, and to contradictions of all kinds; he does not mean, as Cousin asserts, if *a plurality devoid of all unity* be assumed, no motion, &c., would be possible. If such had been Zeno's opinion, he must before all things have discriminated the plurality devoid of unity from the plurality limited by unity. But it is the unavoidable consequence of the Eleatic standpoint, that he did not, and cannot, do this. Unity and plurality, persistence of Being and motion, stand, with the Eleatics, wholly in opposition. Plato first recognised that these apparently opposite determinations could be united, and must be united, in one and the same subject; and in the *Sophist* and *Parmenides* he argues this expressly as against the Eleatic doctrine. Zeno is so far from a similar conviction that his arguments are all directed precisely to the opposite end, to do away with the confused uncertainty of the ordinary notion which represents the One as many, and Being as becoming and variable. Plurality devoid of unity was maintained in his time by Leucippus (only, however, in a limited sense)—but Zeno never alludes to Leucippus. Heracleitus, whom Cousin regards as the chief object of Zeno's attacks, but to whom I can find no reference in his writings, is so far from maintaining plurality without unity that he emphatically asserts the unity of all Being. Cousin is, therefore, wrong in his censure of Aristotle, *l. c.*, p. 80:—*Aristote accuse Zénon*

V. MELISSUS.

Melissus resembles Zeno in his attempt to defend the doctrine of Parmenides against ordinary opinion. While, however, Zeno had sought to effect this indirectly by the refutation of the usual theories, and had thus strained to the utmost the opposition of the two points of view, Melissus[1] seeks to show in a direct

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de mal raisonner, et lui-même ne raisonne guères mieux et n'est pas exempt de paralogisme; car ses réponses impliquent toujours l'idée de l'unité, quand l'argumentation de Zénon repose sur l'hypothèse exclusive de la pluralité. It is precisely the exclusiveness of this presupposition which Aristotle, with perfect justice, assails. Like Cousin, Grote, *Plato*, i. 103 (who moreover has misunderstood the preceding remarks), believes that Zeno admitted the pre-supposition of plurality without unity, not in his own name, but merely from his adversaries' standpoint. This is in a certain sense true. He desires to refute his adversaries by drawing contradictory inferences from their presuppositions. But the middle terms, which he employs for this purpose, belong not to them, but to himself. *Their* contention is merely: there is a plurality—a motion; *he* seeks to prove that the Many, the Many being assumed, must consist of infinitely many parts, and that in motion, an infinite number of spaces must be traversed, &c.

[1] Of the life of Melissus we

manner that Being can be conceived only as Parmenides defined its concept; and as this direct proof in order to convince an adversary must be deduced from pre-suppositions common to both sides, he tries to find in the representatives of the ordinary mode of thought points of union with the Eleatic doctrine.[1] But for this reason he cannot entirely avoid admitting into the Eleatic doctrine definitions which imperil its purity.

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know little. His father was called Ithagenes, his native place was Samos (Diog. ix. 24). Diogenes, *l. c.* (cf. Ælian, v. 4, vii. 14) describes him as a statesman of note, who had especially distinguished himself as a navarch. This elucidates Plutarch's distinct and reiterated assertion (*Pericl.* c. 26; *Themist.* c. 2, here with an appeal to Aristotle; *Adv. Col.* 32, 6, p. 1126; cf. Suid. Μέλητος Δάρου), which there is not the slightest reason to disbelieve, that Melissus commanded the Samian fleet in the victory over the Athenians, 442 B C. (*Thuc.* i. 117). On this circumstance is probably founded Apollodorus's calculation, ap. Diog. *l. c.*, which places the prime of Melissus in *Ol.* 84 (444–440 B.C.). He was, consequently, a contemporary, most likely a younger contemporary, of Zeno. His doctrine of the unity and invariability of Being is alluded to by the Pseudo-Hippocrates (Polybus) *De Nat. Hom.* c. 1; and vi. 34; Littré. Parmenides was possibly the teacher of Melissus, as well as of Zeno; but this is not established by Diog. *l. c.*; Theod. *Cur. Gr. Aff.* iv. 8, p. 57. The other statements of Diogenes that Melissus was acquainted with Heracleitus does not seem absolutely impossible; but he adds that the Ephesians had their attention first drawn to their fellow citizen through his means, which is most improbable. A treatise of Melissus, doubtless his only work, is mentioned by Simpl. *Phys.* 22 b, simply as *τὸ σύγγραμμα.* Suidas *sub voce* Μέλητος calls it *περὶ τοῦ ὄντος*, Galen, *Ad. Hippocr. De Nat. Hom.* i. p. 5; *De Elem. sec. Hipp.* i. 9, p. 487, Kühn; Simpl. *De Cœlo*, 219 b, 23; *Schol. in Arist.* 509 a, 38: *περὶ φύσεως*; Simpl. *De Cœlo*, 249 b, 42; *Phys.* 15 b: *π. φύσεως ἢ π. τοῦ ὄντος*; from the last passage, Bessarion. *Adv. cal. Plat.* ii. 11, seems to have invented this statement, cf. p. 542, 2. The somewhat important fragments contained in Simplicius have been collected and commented on by Brandis, *Comm. El.* 185 sqq.; Mullach, *Arist. De Mel.* &c. p. 80 sqq.; *Fragm. Phil.* i. 259 sqq.

[1] Simpl. *l. c.*: *τοῖς γὰρ τῶν φυσικῶν ἀξιώμασι χρησάμενος ὁ Μέλισσος περὶ γενέσεως καὶ φθορᾶς ἄρχεται τοῦ συγγράμματος οὕτως.* Cf. in Fr. 1, the words *συγχωρέεται γὰρ καὶ τοῦτο ὑπὸ τῶν φυσικῶν.* The *καὶ τοῦτο* shows that Melissus had already appealed in the context to the assent of the physicists.

All that has been transmitted to us of Melissus' doctrine of Being may be reduced to the four determinations of its eternity, its infinity, its unity, and its invariability.

That which is, is underived and imperishable. For, were it derived, it must have come either from Being or from non-Being. Now that which arises from Being is not derived, but has existed previously; and from non-Being nothing can be derived; least of all Being in the absolute sense.[1] Similarly, if it passed away, it must be resolved either into something existent or something non-existent; but Being cannot become non-existent, as all admit; and if it passed over into a Being, it could not be said to perish.[2]

If Being is eternal, it must also, Melissus thinks, be infinite, for what has not been derived and does not pass away, has neither beginning nor end; and what has neither beginning nor end, is infinite.[1] This definition, in which Melissus diverges from Parmenides, has drawn down upon him the severe censure of Aristotle,[2] and it is evident that it approved itself to Aristotle neither in itself nor in regard to the arguments on which it is based. In these, the confusion between infinity in time, and infinity in space, is apparent. Melissus has proved that Being must be according to time without beginning or end; and he concludes from thence, that it can have no limits in space. That this is the sense he gives to the infinity of Being there can be no doubt.[1] He supports his statement, however, by the further observation that Being can only be limited by the void, and as there is no void, it must be unlimited.[2] But if the limited extension which Parmenides attributes to Being was hard to reconcile with its indivisibility, this unlimited extension is much harder. Although, therefore, Melissus expressly guards himself against the corporeality of Being,[3] yet the observation of Aristotle[4] that he seems to conceive it as material, is not altogether unjust. We may rather suppose that the Ionian physics, in spite of his hostility to them, had had some influence on Melissus, and had given rise to this theory

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[1] "*οὔτε ἐκ μὴ ἐόντος οἷόν τε γίνεσθαί τι, οὔτε ἄλλο μὲν οὐδὲν ἐὸν* (this is of course intended by Melissus in a purely hypothetical manner, in the sense of ordinary opinion), *πολλῷ δὲ μᾶλλον τὸ ἁπλῶς ἐόν.*"

[2] Mel. Fr. 1, ap. Simpl. *l. c.* The conclusion of the Fragment is as follows: *οὔτε φθαρήσεται τὸ ἐόν. οὔτε γὰρ ἐς τὸ μὴ ἐὸν οἷόν τε τὸ ἐὸν μεταβάλλειν· συγχωρέεται γὰρ καὶ τοῦτο ὑπὸ τῶν φυσικῶν. οὔτε ἐς ἐόν· μένοι γὰρ ἂν πάλιν οὕτω γε καὶ οὐ φθείροιτο. οὔτε ἄρα γέγονε τὸ ἐὸν οὔτε φθαρήσεται. αἰεὶ ἄρα ἦν τε καὶ ἔσται.* The first part of the above argument is given in the Treatise, *De Melisso*, c 1, sub init., in a somewhat more extended form: *ἀΐδιον εἶναί φησιν εἴ τι ἐστὶν, εἴπερ μὴ ἐνδέχεσθαι γενέσθαι μηδὲν ἐκ μηδενός· εἴτε γὰρ ἅπαντα γέγονεν εἴτε μὴ πάντα, δεῖν ἀμφοτέρως ἐξ οὐδενὸς γενέσθαι ἂν αὐτῶν γιγνόμενα* (before *γιγνόμενα, τὰ* ought probably, as Brandis thinks, to be inserted: vide Mullach *in h. l.*) *ἁπάντων τε γὰρ γιγνομένων οὐδὲν προϋπάρχειν. εἰ δ' ὄντων τινῶν ἀεὶ ἕτερα προσγίγνοιτο, πλέον ἂν καὶ μεῖζον τὸ ἓν γεγονέναι· ᾧ δὴ πλέον καὶ μεῖζον, τοῦτο γενέσθαι ἂν ἐξ οὐδενός· οὐ γὰρ ἐν τῷ ἐλάττονι τὸ πλέον, οὐδ' ἐν τῷ μικροτέρῳ τὸ μεῖζον ὑπάρχειν.* This addition probably is taken from a later portion of the work, which, according to the excellent remark of Brandis (*Comm.* 186), seems to have presented the main ideas and course of the argument, and then to have developed particular parts more accurately. The small Fragment 6, agreeing with a portion of Fr. 1, belonged probably to the same later section. It is clear from p. 585, 3, that in the above doctrines, Melissus was closely allied to Parmenides.

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[1] Fr. 2: *ἀλλ' ἐπειδὴ τὸ γενόμενον ἀρχὴν ἔχει, τὸ μὴ γενόμενον ἀρχὴν οὐκ ἔχει, τὸ δ' ἐὸν οὐ γέγονε, οὐκ ἂν ἔχοι ἀρχήν. ἔτι δὲ τὸ φθειρόμενον τελευτὴν ἔχει, εἰ δέ τί ἐστι ἄφθαρτον, τελευτὴν οὐκ ἔχει, τὸ ἐὸν ἄρα ἄφθαρτον ἐὸν τελευτὴν οὐκ ἔχει· τὸ δὲ μήτε ἀρχὴν ἔχον μήτε τελευτὴν ἄπειρον τυγχάνει ἐόν· ἄπειρον ἄρα τὸ ἐόν.* Similarly in Fr. 7, the conclusion of which, *οὐ γὰρ αἰεὶ εἶναι ἀνυστὸν ὅ τι μὴ πᾶν ἐστι*, only asserts this: if Being were limited in point of magnitude, it could not be eternal: but to explain why it could not, Melissus seems to have given no other reason than that already quoted, viz. that the eternal must be unlimited, because it could not otherwise be without beginning or end. Fr. 8 and 9 are apparently small portions of the same more complete discussion, to which Fr. 7 belonged. Fr. 8 seems to me to contain the opening words of the discussion; this Fragment ought properly therefore to be placed before Fr. 7. Aristotle who frequently refers to this demonstration of Melissus expresses himself in regard to it as if he considered the words *ἐπειδὴ—ἔχει* as the protasis, and the following words: *τὸ μὴ—οὐκ ἔχει* as the apodosis. Cf. *Soph. El.* c. 5, 167 b, 13: *οἷον ὁ Μελίσσου λόγος ὅτι ἄπειρον τὸ πᾶν, λαβὼν τὸ μὲν ἅπαν ἀγένητον (ἐκ γὰρ μὴ ὄντος οὐδὲν ἂν γενέσθαι), τὸ δὲ γενόμενον ἐξ ἀρχῆς γενέσθαι· εἰ μὴ οὖν γέγονεν, ἀρχὴν οὐκ ἔχει [-ειν] τὸ πᾶν, ὥστ' ἄπειρον. οὐκ ἀνάγκη δὲ τοῦτο συμβαίνειν· οὐ γὰρ* (for it does not follow that) *εἰ τὸ γενόμενον ἅπαν ἀρχὴν ἔχει, καὶ εἴ τι ἀρχὴν ἔχει γέγονεν.* So c. 28, 181 a, 27: *Phys.* i. 3, 186 a. 10: *ὅτι μὲν οὖν παραλογίζεται Μέλισσος δῆλον· οἴεται γὰρ εἰληφέναι, εἰ τὸ γενόμενον ἔχει ἀρχὴν ἅπαν, ὅτι καὶ τὸ μὴ γενόμενον οὐκ ἔχει.* So Eudemus, ap. Simpl. *Phys.* 23 a: *οὐ γάρ, εἰ τὸ γενόμενον ἀρχὴν ἔχει, τὸ μὴ γενόμενον ἀρχὴν οὐκ ἔχει, μᾶλλον δὲ τὸ μὴ ἔχον ἀρχὴν οὐκ ἐγένετο.* There can be no doubt, and the parallelism of the next proposition (*ἔτι δὲ τὸ φθειρ.* etc.) proves it—that the words *τὸ μὴ γιγ.* etc., belong to the protasis: 'As the Become has a beginning and the Unbecome none,' etc. Aristotle, therefore, has either been guilty of a wrong construction, or he has presupposed that Melissus concluded that the Unbecome had no beginning, from the fact that everything Become has a beginning. On the other hand, what is said in Arist. *Soph. El.* c. 6, 168 b, 35: *ὡς ἐν τῷ Μελίσσου λόγῳ τὸ αὐτὸ λαμβάνει τὸ γεγονέναι καὶ ἀρχὴν ἔχειν*, and also in the treatise, *De Melisso, l. c.*, agrees with the philosopher's own utterances. The passages in recent authors in regard to this theory of Melissus are to be found in Brandis, *Comm. El.* 200 sq.

[2] *Metaph.* i. 5, 986 b, 25: *οὗτοι μὲν οὖν . . . ἀφετέοι πρὸς τὴν νῦν*

παροῦσαν ζήτησιν, οἱ μὲν δύο καὶ πάμπαν ὡς ὄντες μικρὸν ἀγροικότεροι, Ξενοφάνης καὶ Μέλισσος. *Phys.* i. 3, sub init.: ἀμφότεροι γὰρ ἐριστικῶς συλλογίζονται, καὶ Μέλισσος καὶ Παρμενίδης· καὶ γὰρ ψευδῆ λαμβάνουσι καὶ ἀσυλλόγιστοί εἰσιν αὐτῶν οἱ λόγοι. μᾶλλον δ' ὁ Μελίσσου φορτικὸς καὶ οὐκ ἔχων ἀπορίαν (he contains nothing difficult, he bases his doctrines on nothing that really requires consideration, and he is, therefore, easy to refute), ἀλλ' ἑνὸς ἀτόπου δοθέντος τἆλλα συμβαίνει· τοῦτο δ' οὐθὲν χαλεπόν.

[1] This is clear from Fr. 8: ἀλλ' ὥσπερ ἐστὶ αἰεὶ, οὕτω καὶ τὸ μέγαθος ἄπειρον αἰεὶ χρὴ εἶναι, and from the express and repeated assertions of Aristotle (vide *inf.* p. 632, 2, and *Metaph.* i. 5, 986 b, 18; *Phys.* i. 2, 185 a, 32 b, 16 sqq.).

[2] Vide *inf.* p. 632, 2.

[3] Fr. 16: εἰ μὲν ἐὸν ἐστι, δεῖ αὐτὸ ἓν εἶναι· ἓν δὲ ἐὸν δεῖ αὐτὸ σῶμα μὴ ἔχειν· εἰ δὲ ἔχοι πάχος, ἔχοι ἂν μόρια καὶ οὐκέτι ἂν εἴη ἕν.

[4] *Metaph. l. c.* vide *sup.* p. 548, 1. In criticising this passage, it should be remembered that the concept ὕλη is with Aristotle wider than that of σῶμα, cf. Part ii. b, 243 sq., second edition.

of his, which did not accord with the Eleatic doctrine of the unity of Being.

It is true that our philosopher directly infers the unity of Being from its unlimitedness. If there were several Beings, he says, they would necessarily all be limited in regard to each other; if Being is unlimited, it is also one.[1] In his opinion multiplicity also is in itself inconceivable. For in order to be many, things must be separated by the void; but there cannot be a void, for the void would be nothing else than non-Being. Even if we suppose that the parts of matter directly touch one another, without having anything between them, the argument gains nothing. For if matter were divided at all points and there were consequently no unity, there could also be no multiplicity, all would be empty space; if, on the other hand, matter were only divided at certain points, there is no reason why it should not everywhere be so. It cannot, therefore, be divided at all.[2] Finally, Melissus also attains the same result in the following manner. If the so-called many things really were what they seem to us, they could never cease to be so. Since our perception shows us change and decease, it refutes itself, and consequently deserves no faith in regard to what it says about the multiplicity of things.[1] This remark, how-

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[1] Fr. 3: *εἰ δὲ ἄπειρον, ἕν· εἰ γὰρ δύο εἴη, οὐκ ἂν δύναιτο ἄπειρα εἶναι ἀλλ' ἔχοι ἂν πέρατα πρὸς ἄλληλα· ἄπειρον δὲ τὸ ἐὸν, οὐκ ἄρα πλέω τὰ ἐόντα· ἓν ἄρα τὸ ἐόν.* Fr. 10: *εἰ μὴ ἓν εἴη, περανέει πρὸς ἄλλο.* Arist. *De Melisso*, i. 974 a, 9.

[2] Arist. *Gen. et Corr.* i. 8, 325 a, 2: *ἐνίοις γὰρ τῶν ἀρχαίων ἔδοξε τὸ ὂν ἐξ ἀνάγκης ἓν εἶναι καὶ ἀκίνητον· τὸ μὲν γὰρ κενὸν οὐκ ὂν, κινηθῆναι δ' οὐκ ἂν δύνασθαι μὴ ὄντος κενοῦ κεχωρισμένου, οὐδ' αὖ πολλὰ εἶναι μὴ ὄντος τοῦ διείργοντος. τοῦτο δ' οὐδὲν διαφέρειν, εἴ τις οἴεται μὴ συνεχὲς εἶναι τὸ πᾶν ἀλλ' ἅπτεσθαι διῃρημένον, τοῦ φάναι πολλὰ καὶ μὴ ἓν εἶναι καὶ κενόν. εἰ μὲν γὰρ πάντῃ διαιρετὸν, οὐθὲν εἶναι ἓν, ὥστε οὐδὲ πολλὰ* (similarly Zeno, *sup.* p. 615, 1) *ἀλλὰ κενὸν τὸ ὅλον· εἰ δὲ τῇ μὲν τῇ δὲ μή, πεπλασμένῳ τινὶ τοῦτ' ἐοικέναι· μέχρι πόσου γὰρ καὶ διὰ τί τὸ μὲν οὕτως ἔχει τοῦ ὅλου καὶ πλῆρές ἐστι, τὸ δὲ διῃρημένον; ἔτι ὁμοίως φάναι ἀναγκαῖον μὴ εἶναι κίνησιν. ἐκ μὲν οὖν τούτων τῶν λόγων, ὑπερβάντες τὴν αἴσθησιν καὶ παριδόντες αὐτὴν ὡς τῷ λόγῳ δέον ἀκολουθεῖν, ἓν καὶ ἀκίνητον τὸ πᾶν εἶναί φασι καὶ ἄπειρον ἔνιοι· τὸ γὰρ πέρας περαίνειν ἂν πρὸς τὸ κενόν.* That Aristotle in this exposition is thinking chiefly of Melissus, and not (as Philop. *in h. l.* p. 36 a, supposes, probably from his own

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conjecture) of Parmenides, seems most likely for the following reasons: 1. The last proposition unmistakeably refers to the doctrine of Melissus on the unlimitedness of Being. 2. What is here said about motion agrees with what will presently be quoted (p. 635, 1) from Melissus' writings. 3. This whole argument turns upon the theory of empty space, which Parmenides indeed rejected, but to which neither he nor Zeno, as far as we know, attributed so much importance for the criticism of the ordinary point of view. How little ground there is for the assertion of Philoponus we see from the fact that, though he recognises the relation of the foregoing demonstration to the Atomistic philosophy, this does not prevent his ascribing it to Parmenides: *τοῦτο δὲ ἀναιρῶν ὁ Παρμενίδης φησὶν, ὅτι τὸ οὕτως ὑποτίθεσθαι οὐδὲν διαφέρει τοῦ ἄτομα καὶ κενὸν εἰσφέρειν.*

[1] Fr. 17 (ap. Simpl. *De Cælo*, 250 a, f: *Schol. in Arist.* 509 b, 18, partly also Aristocles ap. Eus. *Pr. Ev.* xiv. 17. I here follow Mullach): *μέγιστον μὲν ὦν σημεῖον οὗτος ὁ λόγος, ὅτι ἓν μόνον ἔστι. ἀτὰρ καὶ τάδε σημεῖα· εἰ γὰρ ἦν πολλὰ, τοιαῦτα χρῆν αὐτὰ εἶναι, οἷόν περ ἐγώ φημι τὸ ἓν εἶναι. εἰ γὰρ ἔστι γῆ καὶ ὕδωρ καὶ σίδηρος καὶ χρυσὸς καὶ πῦρ καὶ τὸ μὲν ζωὸν τὸ δὲ τεθνηκὸς καὶ μέλαν καὶ λευκὸν καὶ τὰ ἄλλα πάντα ὅσσα οἱ ἄνθρωποί φασι εἶναι ἀληθέα. εἰ δὴ ταῦτα ἔστι καὶ ἡμέες ὀρθῶς ὁρέομεν καὶ ἀκούομεν, εἶναι χρὴ ἕκαστον τοιοῦτον, οἷόν περ τὸ πρῶτον ἔδοξεν ἡμῖν, καὶ μὴ μεταπίπτειν μηδὲ γίνεσθαι ἑτεροῖον, ἀλλ' αἰεὶ εἶναι ἕκαστον οἷόν περ ἔστιν. νῦν δέ φαμεν ὀρθῶς ὁρῇν καὶ ἀκούειν καὶ συνιέναι· δοκέει δὲ ἡμῖν τό τε θερμὸν ψυχρὸν γίνεσθαι καὶ τὸ ψυχρὸν θερμὸν καὶ τὸ σκληρὸν μαλθακὸν καὶ τὸ μαλθακὸν σκληρὸν, καὶ τὸ ζωὸν ἀποθνήσκειν καὶ ἐκ μὴ ζῶντος γίνεσθαι, καὶ ταῦτα πάντα ἑτεροιοῦσθαι. καὶ ὅ τι ἦν τε καὶ ὃ νῦν ἔστι οὐδὲν ὁμοῖον εἶναι, ἀλλ' ὅ τε σίδηρος σκληρὸς ἐὼν τῷ δακτύλῳ κατατρίβεσθαι ὁμοῦ ῥέων* (so the editions read, Mullach conjectures *ὁμοῦ ἐὼν*, or preferably *ἐπαρηρώς*; Bergk, *De Xen.* 30, *ὁμουρέων*; but none of these amendments satisfy me; perhaps there may be an *ἰοῦ* in the *ὁμοῦ*): *καὶ χρυσὸς καὶ ἄλλο ὅ τι ἰσχυρὸν δοκέει εἶναι πᾶν, ἐξ ὕδατός τε γῆ καὶ λίθοι γίνεσθαι, ὥστε συμβαίνει μήτε ὁρῇν μήτε τά ἐόντα γινώσκειν. οὐ τοίνυν ταῦτα ἀλλήλοις ὁμολογέει· φαμένοις γὰρ εἶναι πολλὰ ἀΐδια* (? perhaps we should read *αἰεὶ*) *καὶ εἴδεά τε καὶ ἰσχὺν ἔχοντα πάντα ἑτεροιοῦσθαι ἡμῖν δοκέει καὶ μεταπίπτειν ἐκ τοῦ ἑκάστοτε ὁρεομένου. δῆλον τοίνυν ὅτι οὐκ ὀρθῶς ὁρέομεν, οὐδὲ ἐκεῖνα πολλὰ ὀρθῶς δοκέει εἶναι. οὐ γὰρ ἂν μετέπιπτε εἰ ἀληθέα ἦν, ἀλλ' ἦν, οἷόν περ ἐδόκεε ἕκαστον, τοιοῦτον· τοῦ γὰρ ἐόντος ἀληθινοῦ κρέσσον οὐδέν. ἢν δὲ μεταπέσῃ, τὸ μὲν ἐὸν ἀπώλετο, τὸ δὲ οὐκ ἐὸν γέγονε. οὕτως ἂν εἰ πολλὰ ἦν τοιαῦτα χρῆν εἶναι οἷόν περ τὸ ἕν.*

ever, which he himself designates merely as a secondary proof, encroaches on the ground which Melissus had already occupied in his polemic against the possibility of motion and variability in general.

Being cannot move, it can experience no increase, no change of its condition, no pain; for every movement is a transition to another, a cessation of the old and the arising of something new. But Being is One, and there is none besides; it is eternal, so that it neither ceases nor arises; it is necessarily, therefore, changeless, and always like itself; for all change, even the slowest, must in time lead to an entire cessation of that which changes.[1] In regard to motion in the narrower sense—motion in space,—this, Melissus thinks, cannot be conceived without the theory of an empty space. For if a thing has to move to another place, this place must be empty in order to receive it. If, on the other hand, it withdraws into itself, it must become denser than it was previously, that is to say, it must become less empty, for rarer means that which contains more empty space, denser that which contains less. Every movement presupposes a void; that which can receive another into itself is void; that which cannot receive another is full; that which moves can only do so in the void. But the void would be the non-existent, and the non-existent does not exist. Consequently there is no void, and therefore no motion. Or, in other words, Being can move itself neither in Being (that which is full), for there is no Being besides itself; nor in non-Being (that which is empty), for non-Being does not exist.[1] Melissus also expressly shows, as a result of the denial of multiplicity and motion, that no division of Being or mixture of substances is possible.[2] He was, no doubt, led to this by the doctrine of Empedocles, for Empedocles thought he could escape the Eleatic objections to the possibility of Becoming, by reducing generation and destruction to mixture and separation. He may, however, have been referring likewise to Anaxagoras if he were acquainted with the writing of that philosopher. In his arguments against motion, the proposition that all motion presupposes a void, and that the void would be non-Being, clearly betrays a knowledge of the Atomistic doctrine. For it is not likely that the Atomists borrowed this, their fundamental theory, from Melissus (vide *infra*). On the other hand, the remark about rarefaction and condensation points to the school of Anaximenes. From this it is clear that Melissus occupied himself to a considerable extent with the doctrines of the physicists.

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[1] Fr. 4: *ἀλλὰ μὴν εἰ ἕν, καὶ ἀκίνητον· τὸ γὰρ ἓν ἐὸν ὅμοιον αἰεὶ ἑωυτῷ· τὸ δὲ ὅμοιον οὔτ' ἂν ἀπόλοιτο, οὔτ' ἂν μέζον γίνοιτο, οὔτε μετακοσμέοιτο, οὔτε ἀλγέοι, οὔτε ἀνιῷτο. εἰ γάρ τι τούτων πάσχοι οὐκ ἂν ἓν εἴη. τὸ γὰρ ἡντιναοῦν κίνησιν κινεόμενον ἔκ τινος καὶ ἐς ἕτερόν τι μεταβάλλει. οὐδὲν δὲ ἦν ἕτερον παρὰ τὸ ἐόν, οὐκ ἄρα τοῦτο κινήσεται.* So Fr. 11 (ap. Simpl. *Phys.* 24 a, u; cf. *De Cœlo*, 52 b, 20; *Schol.* 475 a, 7), with the corresponding proof: *εἰ γὰρ τι τούτων πάσχοι, οὐκ ἂν ἔτι ἓν εἴη. εἰ γὰρ ἑτεροιοῦται, ἀνάγκη τὸ ἐὸν μὴ ὁμοῖον εἶναι, ἀλλ' ἀπόλλυσθαι τὸ πρόσθεν ἐόν, τὸ δὲ οὐκ ἐὸν γίνεσθαι. εἰ τοίνυν τρισμυρίοισι ἔτεσι ἑτεροῖον γίνοιτο τὸ πᾶν, ὅλοιτο ἂν ἐν τῷ παντὶ χρόνῳ.* Fr. 12 then shows the same in regard to the *μετακόσμησις*, by which we are to understand each previous change in the condition of a thing; the words are: *ἀλλ' οὐδὲ μετακοσμηθῆναι ἀνυστόν· ὁ γὰρ κόσμος* (the whole, which is founded upon a definite arrangement of its parts, the complex) *ὁ πρόσθεν ἐὼν οὐκ ἀπόλλυται, οὔτε ὁ μὴ ἐὼν γίνεται*, etc. Fr. 13 adds to this what seems to us the very superfluous argument that Being cannot experience pain or grief, for what is subject to pain cannot be eternal, or equal in power to the healthy, and must necessarily change, since pain is partly the consequence of some change, and partly the cessation of health and the arising of sickness. Evidence at third hand for the immobility of matter as held by Melissus (cf. Arist. *Phys.* i. 2, sub init.; *Metaph.* i. 5, 986 b, 10 sqq.) it is needless to quote.

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[1] Fr. 5: καὶ κατ' ἄλλον δὲ τρόπον οὐδὲν κενεόν ἐστι τοῦ ἐόντος· τὸ γὰρ κενεὸν οὐθέν ἐστι· οὐκ ἂν ὧν εἴη τό γε μηδέν. οὐ κινέεται ὦν τὸ ἐόν· ὑποχωρῆσαι γὰρ οὐκ ἔχει οὐδαμῇ κενεοῦ μὴ ἐόντος. ἀλλ' οὐδὲ ἐς ἑωυτὸ συσταλῆναι δυνατόν· εἴη γὰρ ἂν οὕτως ἀραιότερον ἑωυτοῦ καὶ πυκνότερον· τυῦτο δὲ ἀδύνατον. τὸ γὰρ ἀραιὸν ἀδύνατον ὁμοίως εἶναι πλῆρες τῷ πυκνῷ, ἀλλ' ἤδη τὸ ἀραιόν γε κενεώτερον γίνεται τοῦ πυκνοῦ· τὸ δὲ κενεὸν οὐκ ἔστι. εἰ δὲ πλῆρές ἐστι τὸ ἐὸν ἢ μή, κρίνειν χρὴ τῷ ἐσδέχεσθαί τι αὐτὸ ἄλλο ἢ μή· εἰ γὰρ μὴ ἐσδέχεται, πλῆρες, εἰ δὲ ἐσδέχοιτό τι, οὐ πλῆρες. εἰ ὦν ἐστι μὴ κενεὸν, ἀνάγκη πλῆρες εἶναι· εἰ δὲ τοῦτο, μὴ κινέεσθαι· οὐχ ὅτι μὴ δυνατὸν διὰ πλήρεος κινέεσθαι, ὡς ἐπὶ τῶν σωμάτων λέγομεν, ἀλλ' ὅτι πᾶν τὸ ἐὸν οὔτε ἐς ἐὸν δύναται κινέεσθαι, οὐ γὰρ ἔστι τι παρ' αὐτὸ, οὔτε ἐς τὸ μὴ ἐὸν, οὐ γὰρ ἔστι τὸ μὴ ἐόν. So Fr. 14, in part word for word. From this and the foregoing passages is taken the extract, *De Melisso*, c. 1, 974 a, 12 sqq., where the doctrine is specially insisted on, which Melissus himself advances in Fr. 4, 11, and which, as it would appear, he has expressly demonstrated in a previous passage: that Being as One is ὅμοιον πάντη. Aristotle refers to these same expositions, *Phys.* iv. 6, 213 b, 12: Μέλισσος μὲν οὖν καὶ δείκνυσιν ὅτι τὸ πᾶν ἀκίνητον ἐκ τούτων (from the impossibility of motion without empty space) εἰ γὰρ κινήσεται, ἀνάγκη εἶναι (φησὶ) κενὸν, τὸ δὲ κενὸν οὐ τῶν ὄντων.

[2] Vide, in regard to the mixture,

On the whole, with the exception of the statement that the One is unlimited, we find that our philosopher adhered strictly to the doctrine of Parmenides. This doctrine, however, was not developed further by him, and though he undertook to defend it against the physicists, his arguments are unmistakeably inferior to those of Zeno in acuteness. But they are not wholly valueless; his observations especially concerning motion and change give evidence of thought, and bring out real difficulties. Besides Parmenides and Zeno, he appears only as a philosopher of the second rank, but still, considering his date, as a meritorious thinker.

It is obvious that he also agreed with the above-

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the extract, *De Melisso*, *l. c.* 3, 24 *διήρηται τὸ ἐὸν, κινέεται, κινεόμενον* sqq.; on the division, Fr. 15: *εἰ δὲ οὐκ ἂν εἴη ἅμα.*

mentioned philosophers in rejecting the testimony of the senses, inasmuch as they delude us with the appearance of multiplicity and change;[1] he probably attempted no thorough investigation of the faculty of cognition, and nothing of this kind has been attributed to him.

Some of the ancients ascribe to Melissus physical propositions. According to Philoponus, he first, like Parmenides, treated of the right view, or the unity of all Being; then of the notions of mankind, and in his third section he named fire and water as the primitive substances.[2] Stobæus ascribes to him, in common with Zeno, the Empedoclean doctrine of the four elements and of the two moving forces; and that in a sense which at once suggests a later origin.[3] Stobæus also says that he maintained the All to be unlimited, and the world to be limited.[4] Epiphanius represents him as having taught that nothing is of a permanent nature, but all is transient.[5] These statements, however, are exceedingly suspicious; first because Aristotle expressly mentions as characteristic, of Parmenides, in contradistinction from Xenophanes and Melissus, that side by side with Being he enquired into the causes of phenomena;[6] and secondly, because they are individually so untrustworthy;[1] we may, therefore, unhesitatingly set them aside. Another statement, that Melissus avoided all mention of the gods, because we can know nothing about them,—sounds more probable;[2] but here again the evidence is inadequate. If Melissus really expressed himself thus, he no doubt intended, not to assert his philosophical conviction of the unknowableness of the Divine—which he must have believed himself to have known in his doctrine of Being,—but like Plato, in the Timæus (40 D), to avoid any dangerous expression concerning the relation of his own theory to the popular faith.

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[1] Fr. 17 (*sup.* p. 633, 1); Arist. *Gen. et Corr.* i. 8; *sup.* p. 632, 2; De Melisso, c. 1, 974 b, 2; Aristocl. ap. Eus. *Pr. Ev.* xiv. 17, 1; cf. p. 591, 1.

[2] *Phys.* B, 6: ὁ Μέλ. ἐν τοῖς πρὸς ἀλήθειαν ἓν εἶναι λέγων τὸ ὂν· ἐν τοῖς πρὸς δόξαν δύο φησὶν εἶναι τὰς ἀρχὰς τῶν ὄντων, πῦρ καὶ ὕδωρ.

[3] *Sup.* p. 611, 2.

[4] *Ecl.* i. 440: Διογένης καὶ Μέλισσος τὸ μὲν πᾶν ἄπειρον, τὸν δὲ κόσμον πεπερασμένον.

[5] *Exp. Fid.* 1087 D.

[6] *Metaph.* i. 5, according to the quotation on p. 626, 1: Παρμενίδης δὲ μᾶλλον βλέπων ἔοικέ που λέγειν· παρὰ γὰρ τὸ ὄν, etc. (Vide *sup.* p. 587, 3; 593, 1: cf. also c. 4, 984 b, 1.)

VI. HISTORICAL POSITION AND CHARACTER OF THE ELEATIC SCHOOL.

Zeno and Melissus are the last of the Eleatic philosophers of whom we know any particulars. Soon after them, the school as such appears to have died out;[3]

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[1] This has already been shown, p. 612, in regard to the statement of Stobæus, i. 60. The second passage in Stobæus attributes to Melissus a definition, for which there is no foundation whatever in his system, and which was first introduced by the Stoics (Part iii. a, 174, 1). As Melissus is here named with Diogenes, we might conjecture that the statement perhaps arose from Diogenes the Stoic, in some passage where he brought forward this doctrine, having mentioned the definition of Melissus and explained it in the spirit of his school. As regards Philoponus, he is very untrustworthy in respect to the most ancient philosophers. In the present instance the titles themselves, *τὰ πρὸς ἀλήθειαν, τὰ πρὸς δόξαν*, prove that there is a confusion with Parmenides. The statement of Epiphanius is perhaps founded on a misapprehension of the discussion quoted p. 632, 2, or perhaps on some confusion with another philosopher.

[2] Diog. ix. 24.

[3] Plato indeed in the introduction to the *Parmenides* names a certain Pythodorus as the disciple and friend of Zeno; and in the *Soph.* 216 A, 242 D (*sup.* p. 562, 1) he speaks of the Eleatic school as if it were still in existence at the supposed date of this dialogue, the latest years of Socrates. Little,

and what remained of it was lost in Sophistic,[1] for which Zeno had already prepared the way, and subsequently through the instrumentality of Sophistic, in the Socratico-Megarian philosophy. Partly in this indirect manner, and partly directly, through the writings of Parmenides and Zeno, the Eleatic School furnished its quota to the Platonic philosophy of the concept, and afterwards to the Aristotelian physics and metaphysics. But previously to this, it had considerably influenced the development of the pre-Socratic philosophy of nature. Heracleitus seems to have received impulses, not merely from the Ionians, but also from Xenophanes; in Empedocles, the Atomists, and Anaxagoras, the connection with Parmenides asserts itself more definitely. All these philosophers pre-suppose the concept of Being which Parmenides had introduced; they all admit that the Real is, in the last resort, eternal and imperishable; they all deny, for this reason, its qualitative change, and they are thus forced into the theory of a multiplicity of unchangeable primitive substances, and into that mechanical direction which thenceforward for a long period was predominant in physics. The conception of the element and the atom,

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however, can be inferred from this, as Plato may have been led to represent the matter thus from the form of dialogue which he is using. Another philosopher, Xeniades of Corinth, who perhaps came forth from the Eleatic school, and, like Gorgias, blended the Eleatic doctrine with Scepticism, will be spoken of later on in the chapter on Sophistic.

[1] As Plato himself indicates in the opening of the *Parmenides*, for after the Eleatic stranger has been described as ἑταῖρος τῶν ἀμφὶ Παρμενίδην καὶ Ζήνωνα, Socrates enquires ironically whether he is not perhaps a θεὸς ἐλεγκτικός; and Theodorus replies that he is μετριώτερος τῶν περὶ τὰς ἔριδας ἐσπουδακότων, which it seems from this that the Eleatics, as a rule, must then have been.

the reduction of change to combination and separation in space, originated with the Eleatics. The Eleatic doctrine forms therefore the main turning point in the history of ancient speculation, and after its completion by Parmenides, no philosophic system arose which was not essentially determined by its relation to that doctrine.

This circumstance would alone prevent our separating the Eleatic doctrine as to its general aim from the contemporary natural philosophy, and attributing to it, instead of a physical, a dialectical or metaphysical character; and a more particular examination will at once show how far removed its founders were from a pure philosophy of the concept, or ontology. We have seen that Xenophanes proposed to himself essentially the same problem as the physicists,—to determine the cause of natural phenomena, the essence of things; we have found that even Parmenides and his disciples conceive Being as extended in space; we have learned the verdict of Aristotle [1] on the Eleatics generally, that their Being is merely the substance of sensible things. From all this it is clear that these philosophers, too, were originally concerned with the knowledge of nature; that they also start from the given and actual, and from thence alone, in their search for its universal cause, attained their more abstract definitions. We must therefore regard the Eleatic doctrine in its general tendency, not as a dialectical system, but a system of natural philosophy.[2] Zeno, it is true, made use of the dialectic method in its defence, and was therefore called by Aristotle the discoverer of dialectics;[3] but the Eleatic philosophy as a whole is still far from being a system of dialectics. In order to be so, it should be dominated by a more definite view of the problem and method of scientific knowledge; its physical and metaphysical enquiry should be preceded by a theory of knowledge, and its view of the world should be regulated by the definition and discrimination of concepts. But all this is wholly absent. The Eleatics after the time of Parmenides distinguish the sensible and the rational contemplation of things, but this distinction has with them only the same import as with Heracleitus, Empedocles, Anaxagoras, and Democritus; it is not the basis, but the consequence, of their metaphysical propositions, and is developed as little into a real theory of knowledge, as by the other physicists. Of the principle by which Socrates struck out a new way for philosophy—viz., that the investigation of concepts must precede all knowledge of objects—we find no trace, neither in the explicit declarations of the Eleatics, nor in their scientific procedure. All that we know of them tends to confirm the view of Aristotle, who regards Socrates as absolutely the first founder of the philosophy of the concept; and seeks the imperfect germ of that philosophy which can be detected in the earlier science, not in the Eleatics, but in Democritus, and to some extent also in the Pythagoreans.[1] In the

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[1] Vide *sup.* p. 190, 1, 2.

[2] Cf. with what follows, p. 185 sq.

[3] *Sup.* p. 613, 2.

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[1] *Part. Anim.* i. 1 (*sup.* p. 186, 3); *Metaph.* xiii. 4, 1078 b, 17: Σωκράτους δὲ περὶ τὰς ἠθικὰς ἀρετὰς πραγματευομένου καὶ περὶ τούτων ὁρίζεσθαι καθόλου ζητοῦντος πρώτου (τῶν μὲν γὰρ φυσικῶν ἐπὶ μικρὸν Δημόκριτος ἥψατο μόνον καὶ ὡρίσατό πως τὸ θερμὸν καὶ τὸ ψυχρόν· οἱ δὲ Πυθαγόρειοι πρότερον περί τινων ὀλίγων . . .) ἐκεῖνος εὐλόγως ἐζήτει τὸ τί ἐστιν . . . δύο γάρ ἐστιν ἅ τις ἂν ἀποδοίη Σωκράτει δικαίως, τούς τ' ἐπακτικοὺς λόγους καὶ τὸ ὁρίζεσθαι καθόλου. Similarly *ibid.* i. 6, 987 b, 1; cf.

Eleatic system it is not the idea of knowing, but the concept of Being, that dominates the whole; and this system forms no exception to the dogmatism of the pre-Socratic philosophy of nature. We must therefore speaking generally, class the Eleatics among the Physicists, as was sometimes done even in ancient times;[1] although in their material results they stand widely apart from the rest of the physical philosophers. In other respects, the historical position of this school, and its importance in the development of Greek thought, have been already considered in the introduction.

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xii. 9, 1086 b, 2; *Phys.* ii. 2, 194, i, 20, and what is quoted on p. 550, 3.

[1] Plut. *Pericl.* c. 4; Sext. *Math.* vii. 5, in regard to Parmenides.

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